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CHARLES ELMORE

IN THE

Supreme Court of the United States

OCTOBER TERM, A. D. 1930.

No. [redacted]3

THE PERMUTIT COMPANY,

Petitioner,

vs.

GRAVER CORPORATION,

Respondent.

ON WRIT OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE SEVENTH CIRCUIT.

BRIEF FOR RESPONDENT.

GEORGE L. WILKINSON,
CHARLES L. BYRON,
Counsel for Respondent.

BLAKEMORE-WARREN PRINTING COMPANY, CHICAGO.

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1931
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INDEX.

PAGE

Summary of Argument iii

List of Authorities viii

Statement of Facts 1

The Contested Issues 2

Argument 3

Points and Authorities 3

Discussion of Points and Authorities 12

Findings of Fact Quoted from Trial Judge Lindley's Opinion 135

Re Gans Article of April 15, 1909 ..... 135, 136

Upflow softeners of greater utility than downflow softeners 137

Re Gebrauchsmuster No. 313,671, June 27, 1907. 137

Re Gebrauchsmuster No. 341,512, May 30, 1908.. 137

Gebrauchsmuster a patent 138

Leister German patent No. 211,064, January 23, 1908 138

Weiss Thesis, June 3, 1910 138

Rundschau Article of January 27, 1909 138

Rundschau device built by defendant 139

Foreign publications 139

What art taught Gans 139

Apparatus and zeolites not new 140

Alleged patentable features 140

No basis in specification or claims for "Free and Unconfined Bed" 140

Free and unconfined bed. Gans knew of same in 1907 and 1908 and is bound thereby 141

Prior art taught Gans everything in his patent in suit 141

Sand filter and zeolite softener analogous arts 141, 142

Conclusions of Law Stated in Judge Lindley's Opinion 142
Claims cover only filtering device..... 142
Test of validity 142, 143
Foreign patent does not have to be printed... 143
Gans bound by teachings of prior art..... 143
Free and unconfined bed..... 143
Free and unconfined bed no invention..... 144
Lowest point drainage no invention..... 144
No invention..... 144
No invention in substituting zeolites for sand in filter 144, 145
Findings of Fact Quoted from Opinion of Seventh Circuit Court of Appeals..... 145
Upflow softeners of greater utility than downflow softeners 145
No basis in specification or claims for "Free and Unconfined Bed" 145, 146
Gans Article of April 15, 1909..... 146
Feldhoff Article of September 7, 1907..... 147
Prior art 147, 148
Record in Seventh Circuit different from records in Second and Sixth Circuit cases..... 148
Conclusions of Law Stated in the Opinion of the Seventh Circuit Court of Appeals..... 148
Claims on apparatus, not zeolites..... 148
No invention in downflow over upflow..... 149
Free and unconfined bed..... 149
Free and unconfined bed—Claim 1 invalid...149, 150
Bommarius patents Nos. 519,565 and 632,091.. 150
Gebrauchsmuster 150
Claim 5 invalid 150
Claim 1 invalid in view of Technische Rundschau 151

Claim 5 not infringed..... 151
Extensive commercial use not ascribed to apparatus 151
Incorrect statements made in petitioner's brief. 151

Conclusion 125, 126

SUMMARY OF ARGUMENT.

I. There is no conflict on the same matter between the decisions of the Courts of Appeals for the Second and Sixth Circuits on the one part and the Court of Appeals for the Seventh Circuit on the other part 3, 12

II. Gans' distorted and invalid claims....4, 15

III. Gans could not fool the German government as he did the United States government. He knew, and the German government knew, of the statutory bar (more than two years prior publication) against the grant of a valid patent. Therefore Gans did not apply for a patent in his own country (Germany) but took a false oath to deceive the United States government and obtain an invalid patent 5, 16

IV. Gans patent No. 1,195,923, in suit..... 20

V. Gans file wrapper on Claim 1.....5, 22

VI. Gans file wrapper on Claim 5..... 25

VII. Defendant's upflow softener does not infringe Claims 1 and 5. Plaintiff admits Claim 1 is not infringed, because by disclaimer it is limited to a "downflow" softener. Claim 5 is not infringed because defendant's "upflow" softener

does not have "means connected to the lowest point of the casing for removing the salt solution so introduced"...5, 28

VIII. Plaintiff's Brooklyn tests of defendant's upflow softener mere smoke-screen 31

IX. Claim 5 is clearly invalid. It is met in every minute detail 6, 35

X. Rundschau softener built and tested proves upflow is superior to downflow.6, 42

XI. Claim 1 is invalid.....6, 49

XII. Gans Article of April 15, 1909 is a complete anticipation of Claim 1. Plaintiff's patent expert, Mr. Waterman, stated in any place where Gans mentioned "Back-washing," he meant the zeolite bed is "Free and Unconfined." He therefore admitted that this Gans Article completely invalidates Claim 1 even with the unwarranted and baseless injection into said claim ma[illegible] by the Second and Sixth Circuit C[illegible]f Appeals 6, 49

XIII. Judge Lindley's findings and remarks on Gans Article of April 15, 1909. He held that this publication completely describes the alleged invention and invalidates the claims. The Seventh Circuit Court of Appeals affirmed Judge Lindley's decision..... 56

XIV. Feldhoff Article of September 7, 1907 completely anticipates Claim 1 and Gans disclaimed in view thereof.....7, 60

XV. Plaintiff sued Wadham, et al. in the Sixth Circuit Court for infringement of the Duggan patent No. 1,276,629, thereby positively asserting that its locked zeolite bed is commercially operable for both upflow and downflow softeners and that the upflow is superior in operation. Plaintiff therefore is now estopped from asserting contraposition 7, 69

XVI. Gebrauchsmuster No. 313,671—June 27, 1907. Meets Claim 1..... 7, 73

XVII. Judge Lindley on anticipatory value of Gebrauchsmuster 8, 77

XVIII. Gebrauchsmuster No. 341,512, May 30, 1908, anticipates the alleged invention 77

XIX. Leister German patent No. 211,064, January 23, 1908, anticipates alleged invention 79

XX. Weiss Thesis meets alleged invention.. 82

XXI. Old sand filters the basis of zeolite water softeners. Before defendant made zeolite water softeners, it made sand filters both being identical in structure 85

XXII. Plaintiff's technical manager admits that a zeolite softener is nothing but a sand filter in construction; therefore, plaintiff is estopped from asserting to the contrary 8, 86

XXIII. Judge Lindley's summing up of the prior art 8, 89

XXIV. The Seventh Circuit Court of Appeals summing up of the prior art..... 8, 94

XXV. Deficiencies of the Gans patent in suit 97

XXVI. Upflow zeolite water softeners are a commercial success and are superior to downflow softeners. Plaintiff's patent expert was forced to admit it. If Sixth Circuit Court of Appeals had been so advised, it would have held the Gans patent invalid 9, 99

XXVII. Free and unconfined bed. The claims are invalid because there is no statement in the specification that the zeolite bed is free and unconfined, the limitation inserted by the Second and Sixth Circuit Courts of Appeals to save the claims 9, 107

XXVIII. Statutory requirements and court decisions re clearness and conciseness of specification and claims. The claims are clearly invalid because they cannot stand the test 9, 115

XXIX. Plaintiff's alleged commercial success. There is no evidence to prove that plaintiff's commercial success is based upon water softeners. The contrary is established and not rebutted 10, 120

XXX. The witnesses 121

XXXI. Motion for preliminary injunction...10, 122

XXXII. Comity 10, 125

XXXIII. Appendix A.
A Gebrauchsmuster is a patent..11, 127

XXXIV. Appendix B.
Findings of fact quoted from Trial Judge Lindley's opinion..... 135

XXXV. Appendix C.
Conclusions of law stated in Judge Lindley's opinion 142
XXXVI. Appendix D.
Findings of fact quoted from opinion of Seventh Circuit Court of Appeals 145
XXXVII. Appendix E.
Conclusions of law stated in the opinion of the Seventh Circuit Court of Appeals 148
XXXVIII. Appendix F.
Incorrect statements made in petitioner's brief 151
Conclusion 125

List of Authorities.

A.

Adamson v. Gilliland 242 U. S. 350 142
American Adamite Co. v. Mesta Machine Co., 18 Fed. (2) 538 118
American Chain Co. v. Bethlehem Bumper Corp., 25 Fed. (2) 759 ..... 11, 134
American Chain Co. v. C. & G. Spring & Bumper Co., (settled before decision) 7, 76
American Fruit Growers, Inc. v. Brogdex, 51 Sup. Ct. 328 ..... 10, 49, 115

B.

Bene v. Jeantet, 129 U. S. 683 118

C.

Carnegie Steel Co. v. Cambria Iron Co., 185 U. S. 403, 432 ..... 10, 115
Cochrane v. Badische Anilin & Soda Fabrik, 111 U. S. 293 118
Commercial Acetylene Co. v. Acme Acetylene Co., (C. C. A. 6) 192 Fed. 321, 112 C. C. A. 573 ..... 11, 132

E.

Electric Signal Co. v. Hall Signal Co., 114 U. S. 87 .. 118
Elizabeth v. Pavement Co., 97 U. S. 126, 131, 24 L. Ed. 1000 ..... 11, 132

F.

Fuller v. Yentzer, 94 U. S. 288 118

G.

Grant v. Raymond, 6 Pet. 218, 247 115

H.

Holland Furniture Co. v. Perkins Glue Co., 277 U. S. 245, 257 ..... 10, 117
Howard v. Detroit Stove Works, 150 U. S. 164, 167 ..... 10, 116

I.

Incandescent Lamp Patent, 159 U. S. 465, 475, 16 Sup. Ct. 75, 40 L. Ed. 221 ..... 9, 115, 117, 118
Ireson v. Pierce, 39 Fed. 795, 798 (C. C. D. Mass.) . 11, 131

J.

Jay, et al. v. Weinberg, et al., 262 Fed. 973 (C. C. A. 7) 8, 87, 89, 94

K.

Kil-Nock Co. v. Chicago Plating Co., et al., 10 Fed. (2) 536 ..... 6, 48
Knapp v. Morse, 14 S. Ct. 81, 150 U. S. 221, 37 L. Ed. 1059 ..... 6, 10, 49, 118, 124

L.

Leeds & Catlin Co. v. Victor Talking Machine Co., 213 U. S. 301, 318, 29 S. Ct. 495, 53 L. Ed. 805.. ..... 11, 132, 133, 134

M.

Mast, et al. v. Stover Mfg. Co., 177 U. S. 485, 20 S. Ct. 708, 44 L. Ed. 856 ..... 8, 10, 89, 125
Matheson v. Campbell, 78 Fed. 910 118
McCarty v. Lehigh Railroad Co., 160 U. S. 110, 116 ..... 9, 109
Milburn Co. v. Davis, 270 U. S. 390, 46 S. Ct. 324, 70 L. Ed. 651 ..... 11, 134
Mitchell v. Tilghman, 19 Wall. 287 118

O.

O'Reilly, et al. v. Morse, et al. 15 How. 62..... 118

P.

Permutit v. Graver Corporation, 37 Fed. (2) 385..2, 7, 8, 9, 10, 12, 16, 17, 40, 41, 48, 52, 56, 67, 72, 76, 77, 79, 82, 85, 88, 89, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145
Permutit v. Graver Corporation, 43 Fed. (2) 898.... .....4, 6, 7, 8, 9, 10, 11, 18, 29, 41, 60, 67, 82, 87, 94, 121, 122, 145, 146, 147, 148, 149, 150, 151
Permutit v. Harvey Laundry Co., et al., 279 Fed. 713 .....4, 9, 106, 107
Permutit v. Paige & Jones Chemical Co., Inc., 22 Fed. (2) 916.....4, 7, 11, 61, 108, 134
Permutit v. Wadham, et al., 294 Fed. 370..... .....4, 5, 11, 15, 19, 61, 63, 71, 72
Permutit v. Wadham, et al., 13 Fed. (2) 454.....4, 5, 6, 7, 9, 13, 24, 30, 66, 67, 99, 106, 107, 109, 132, 137, 156
Peters v. Active Mfg. Co., 21 Fed. 319.....10, 49, 124
Preston v. Manard, 116 U. S. 763.....10, 118

R.

Risdon Iron & Locomotive Works v. Medart, 158 U. S. 68..... 118
Roberts v. Ryer, 91 U. S. 150, 23 L. Ed. 267..... 10

S.

Safety Gas Lighter Co. v. Fischer Bros. & Corwin, (D. C.) 236 Fed. 955, 962.....8, 11, 131, 133
Sewell v. Jones, 91 U. S. 171, 182..... 49
Sexton v. Reis, Interference No. 37,770, decision by the Board of Examiners-in-Chief, Appeal No. 8405, June 26, 1915; affirmed by the Commissioner of Patents, April 7, 1916 .....11, 131
Sirocco Engineering Co. v. Sturtevant Co., 220 Fed. 137, 143, 136 C. C. A. 91.....11, 131

Smith v. Nichols, 21 Wall. 112, 22 L. Ed. 566.....10, 124
Societe Anonyme etc. v. General Electric Co., 97 Fed. 604, (C. C. S. D. N. Y.).....11, 127
Steiner v. Schwartz, 148 Fed. 868 (C. C. S. D. N. Y.) 11, 131, 132

T.

Tyler v. Boston, 7 Wall. 327, 330..... 116

W.

Westinghouse v. Boyden Power Brake Co., 170 U. S. 537 118
Wood v. Underhill, 5 How. 1, 5..... 115

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OCTOBER TERM, 1930.

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THE PERMUTIT COMPANY.

Petitioner,

vs.

GRAVER CORPORATION,

Respondent.

To the Honorable Chief Justice and Associate Justices of the Supreme Court of the United States:

A STATEMENT OF FACTS.

Petitioner brought suit against respondent in the United States District Court at Chicago, Illinois, for alleged infringement of claims 1 and 5 of the Gans Patent No. 1,195,923, for Apparatus for Softening Water. (R. 584.) The application for said patent was filed August 5, 1911, and the patent granted thereon August 22, 1916.

Said claims 1 and 5 read as follows:

"1. A water softening apparatus comprising a casing, a filter bed consisting of a layer of sand or quartz and a layer of zeolites or hydrated aluminosilicates disposed on the layer of sand or quartz, means for permitting the passage of water through the casing, means for cutting off the supply of water on the exhaustion of the zeolites, and means

for passing through the casing a solution of a salt capable of regenerating the zeolites.

5. Water softening apparatus comprising a casing, a filter bed consisting of a layer of zeolites or alumino-silicates, supporting means for said layer, means for permitting the passage of water through the casing, means for cutting off the supply of water on the exhaustion of the zeolites, means for supplying and passing into the casing a solution of a salt capable of regenerating zeolites and means connected to the lowest point of the casing for removing the salt solution so introduced."

The trial judge, Walter C. Lindley, held said claims invalid for want of invention (R. 555, 570) 37 Fed. (2nd) 385. The Seventh Circuit Court of Appeals on October 20, 1930, affirmed said decision, and additionally held that respondent's "presently used structures" (upflow water softeners) do not infringe claim 5. (R. 679, 689.)

Petitioner does not dispute noninfringement of claim 1 by respondent's "presently used structures," said claim 1, by disclaimer (R. 587), being limited to downflow water softeners.

The petition for certiorari was filed January 17, 1931, and certiorari granted on March 2, 1931.

The Contested Issues.

The contested issues are *first*, the validity of claims 1 and 5 of the Gans patent in suit, and *second*, infringement of claim 5 by respondent's 1927 type of water softener and infringement of claim 5 by respondent's 1925 type of water softener. As indicated above, petitioner does not dispute noninfringement of claim 1 by respondent's 1927 type of water softener.

ARGUMENT.

POINTS AND AUTHORITIES.

I.

THERE IS NO CONFLICT ON THE SAME MATTER BETWEEN THE DECISIONS OF THE COURTS OF APPEALS FOR THE SECOND AND SIXTH CIRCUITS ON THE ONE PART, AND THE COURT OF APPEALS FOR THE SEVENTH CIRCUIT ON THE OTHER PART, FOR THE REASON THAT THE EVIDENCE IN THE SEVENTH CIRCUIT CASE IS NEW AND DIFFERENT IN MANY MATERIAL RESPECTS, INCLUDING:

(1) The Rundschau water softening apparatus (Defendant's Exhibit No. 19) was not in evidence in the cases before the Second and Sixth Circuit Courts of Appeals. (Page 12 of this brief, and page 6 of brief for respondent in opposition to the motion for writ of certiorari.)

(2) The Gans Article of April 15, 1909 (R. 517), plaintiff's translation thereof (R. 450), and defendant's translation thereof (R. 351). Petitioner's patent expert, Mr. Waterman, in the instant case but not in the other cases, supports respondent's contention that said Gans article is a complete anticipation of the claims in issue. (Page 49 of this brief, and page 9 of brief for respondent in opposition to the motion for writ of certiorari.)

(3) Petitioner's letter of March 18, 1920, by its technical expert, Thos. R. Duggan, to Dr. Charles F. McKenna (Defendant's Exhibit No. 62) (R. 546), was not in evidence in the other cases. Said letter admits that

the water softener is nothing but a filter bed but instead of being sand is a zeolite. (Page 86 of this brief, and page 14 of brief for respondent in opposition to the motion for writ of certiorari.)

(4) Commercial success. Testimony in the case at bar establishes uncontroverted fact that commercial success resulted from other products and devices rather than zeolite water softeners. (Page 120 of this brief, and page 16 of brief for respondent in opposition to the motion for writ of certiorari.)

(5) Weiss thesis (R. 521), drawing thereof (R. 524), translation thereof (R. 525) is new evidence in this case. (Page 82 of this brief, and page 17 of brief for respondent in opposition to the motion for writ of certiorari.)

Permutit Company v. *Harvey Laundry Company,* 279 Fed. 713.

Permutit Company v. *Paige & Jones Chemical Co., Inc.* 22 Fed. (2nd) 916.

Permutit Company v. *Wadham et al.* 13 Fed. (2nd) 454.

Permutit Company v. *Graver Corporation,* 43 Fed. 898.

II.

GANS' DISTORTED AND INVALID CLAIMS.

Permutit Company v. *Wadham et al.* 294 Fed. 370. (Page 15.)

III.

GANS COULD NOT FOOL THE GERMAN GOVERNMENT AS HE DID THE UNITED STATES GOVERNMENT. HE KNEW, AND THE GERMAN GOVERNMENT KNEW, OF THE STATUTORY BAR (MORE THAN TWO YEARS PRIOR PUBLICATION) AGAINST THE GRANT OF A VALID PATENT. THEREFORE, GANS DID NOT APPLY FOR A PATENT IN HIS OWN COUNTRY (GERMANY) BUT TOOK A FALSE OATH TO DECEIVE THE UNITED STATES GOVERNMENT AND OBTAINED AN INVALID PATENT. (Page 16.)

Permutit Company v. *Wadham et al.* 294 Fed. 370.

V.

GANS FILE WRAPPER OF CLAIM 1.

Permutit Company v. *Wadham et al.* 13 Fed. (2nd) 454. (Page 22.)

VII.

DEFENDANT'S UPFLOW SOFTENER DOES NOT INFRINGE CLAIMS 1 AND 5. PLAINTIFF ADMITS CLAIM 1 IS NOT INFRINGED BECAUSE BY DISCLAIMER IT IS LIMITED TO A "DOWNFLOW SOFTENER." CLAIM 5 IS NOT INFRINGED BECAUSE DEFENDANT'S UPFLOW SOFTENER DOES NOT HAVE "MEANS CONNECTED TO THE LOWEST POINT OF THE CASING FOR REMOVING THE SALT SOLUTION SO INTRODUCED." (Page 28.)

Permutit Company v. *Wadham et al.* 13 Fed. (2nd) 454.

IX.

CLAIM 5 IS CLEARLY INVALID. IT IS MET IN EVERY MINUTE DETAIL. (Page 35.)

Permutit Company v. *Graver Corporation*, 43 Fed. (2nd) 898.

X.

RUNDSCHAU SOFTENER BUILT AND TESTED PROVES UP-FLOW IS SUPERIOR TO DOWNFLOW. (Page 42.)

Kil-Nock Co. v. *Chicago Plating Co. et al.* 10 Fed. (2nd) 536.

Knapp v. *Morss*, 14 S. Ct. 81, 150 U. S. 221, 37 L. Ed. 1059.

XI.

CLAIM 1 IS INVALID. (Page 49.)

Permutit Company v. *Graver Corporation*, 43 Fed. (2nd) 898.

XII.

GANS ARTICLE OF APRIL 15, 1909, IS A COMPLETE ANTICIPATION OF CLAIM 1. PLAINTIFF'S PATENT EXPERT, MR. WATERMAN, STATED THAT IN ANY PLACE WHERE GANS MENTIONED "BACKWASHING," HE MEANT THE ZEOLITE BED IS "FREE AND UNCONFINED." HE THEREFORE ADMITTED THAT THIS GANS ARTICLE COMPLETELY INVALIDATES CLAIM 1, EVEN WITH THE UNWARRANTED AND BASELESS INJECTION INTO SAID CLAIM MADE BY THE SECOND AND SIXTH CIRCUIT COURTS OF APPEALS. (Page 49.)

Permutit Company v. *Graver Corporation*, 43 (2nd) 454.

Permutit Company v. *Wadham, et al.* 13 Fed. Fed. (2nd) 898.

XIV.

FELDHOFF ARTICLE OF SEPTEMBER 7, 1907, COMPLETELY ANTICIPATES CLAIM 1 AND GANS DISCLAIMED IN VIEW THEREOF. (Page 60.)

Permutit Company v. *Paige & Jones Chemical Co., Inc.* 22 Fed. (2nd) 916.

Permutit Company v. *Wadham, et al.* 13 Fed. (2nd) 454.

XV.

PLAINTIFF SUED WADHAM, ET AL. IN THE SIXTH CIRCUIT FOR INFRINGEMENT OF THE DUGGAN PATENT NO. 1,276,629, THEREBY POSITIVELY ASSERTING THAT ITS LOCKED ZEOLITE BED IS COMMERCIALLY OPERABLE FOR BOTH UPFLOW AND DOWNFLOW SOFTENERS, AND THAT THE UPFLOW IS SUPERIOR IN OPERATION. PLAINTIFF, THEREFORE, IS NOW ESTOPPED FROM ASSERTING CONTRAPOSITION. (Page 69.)

Permutit Company v. *Wadham, et al.* 13 Fed. (2nd) 454.

Permutit Company v. *Graver Corporation,* 37 Fed. (2nd) 385.

Permutit Company v. *Graver Corporation,* 43 Fed. (2nd) 898.

XVI.

GEBRAUCHSMUSTER NO. 313,671, JUNE 27, 1907. (Page 73.)

American Chain Co. v. *C. & G. Spring & Bumper Co.* (settled before decision).

XVII.

JUDGE LINDLEY ON ANTICIPATORY VALUE OF GEBRAUCHSMUSTER. (Page 77.)

Safety Gas Lighter Co. v. *Fischer Bros. & Corwin* (D. C.) 236 Fed. 955.

XXII.

PLAINTIFF'S TECHNICAL MANAGER ADMITS THAT A ZEOLITE WATER SOFTENER IS NOTHING BUT A SAND FILTER IN CONSTRUCTION. THEREFORE, PLAINTIFF IS ESTOPPED FROM ASSERTING TO THE CONTRARY. (Page 86.)

Jay, et al. v. *Weinberg, et al.* 262 Fed. 973.

Permutit Company v. *Graver Corporation,* 37 Fed. (2nd) 385.

Permutit Company v. *Graver Corporation,* 43 Fed. (2nd) 898.

XXIII.

JUDGE LINDLEY'S SUMMING UP OF THE PRIOR ART. (Page 89.)

Jay, et al. v. *Weinberg, et al.* 262 Fed. 973.

Mast, et al. v. *Stover Mfg. Co.* 177 U. S. 485, 20 S. Ct. 708, 44 L. Ed. 856.

Permutit Company v. *Graver Corporation,* 37 Fed. (2nd) 385.

XXIV.

THE SEVENTH CIRCUIT COURT OF APPEALS SUMMING UP OF THE PRIOR ART. (Page 94.)

Permutit Company v. *Graver Corporation,* 43 Fed. (2nd) 898.

XXVI.

UPFLOW ZEOLITE WATER SOFTENERS ARE A COMMERCIAL SUCCESS AND ARE SUPERIOR TO DOWNFLOW WATER SOFTENERS. PLAINTIFF'S PATENT EXPERT WAS FORCED TO ADMIT IT. IF THE SIXTH CIRCUIT COURT OF APPEALS HAD BEEN SO ADVISED, IT WOULD HAVE HELD THE GANS PATENT INVALID. (Page 99.)

Permutit Company v. *Wadham, et al.* 13 Fed. (2nd) 454.

Permutit Company v. *Graver Corporation,* 37 Fed. (2nd) 385.

Permutit Company v. *Graver Corporation,* 43 Fed. (2nd) 898.

XXVII.

FREE AND UNCONFINED BED. THE CLAIMS ARE INVALID BECAUSE THERE IS NO STATEMENT IN THE SPECIFICATION THAT THE ZEOLITE BED IS FREE AND UNCONFINED, THE LIMITATION INSERTED BY THE SECOND AND SIXTH CIRCUIT COURTS OF APPEALS TO SAVE THE CLAIMS. (Page 107.)

McCarty v. *Lehigh Railroad Company,* 160 U. S. 110.

Permutit Company v. *Harvey,* 279 Fed. 713.

Permutit Company v. *Wadham, et al.* 13 Fed. (2nd) 454.

XXVIII.

STATUTORY REQUIREMENTS AND COURT DECISIONS RE CLEARNESS AND CONCISENESS OF SPECIFICATION AND CLAIMS. THE CLAIMS ARE CLEARLY INVALID BECAUSE THEY CANNOT STAND THE TEST. (Page 115.)

Incandescent Lamp Patent, 159 U. S. 465, 16 S. Ct. 75, 40 L. Ed. 221.

American Fruit Growers, Inc. v. *Brogdex,* 51 Sup. Ct. 328.

Carnegie Steel Company v. *Cambria Iron Co.* 185 U. S. 403, 432.

Holland Furniture Co. v. *Perkins Glue Co.* 277 U. S. 245, 257.

Howard v. *Detroit Stove Works,* 150 U. S. 164, 167.

Preston v. *Menard,* 116 U. S. 763.

XXVIX.

PLAINTIFF'S ALLEGED COMMERCIAL SUCCESS. THERE IS NO EVIDENCE TO PROVE THAT PLAINTIFF'S COMMERCIAL SUCCESS IS BASED UPON WATER SOFTENERS. THE CONTRARY IS ESTABLISHED AND NOT REBUTTED. (Page 120.)

Permutit Company v. *Graver Corporation,* 37 Fed. (2nd) 385.

Permutit Company v. *Graver Corporation,* 43 Fed. (2nd) 898.

XXXI.

MOTION FOR PRELIMINARY INJUNCTION. (Page 122.)

Knapp v. *Morss,* 14 S. Ct. 81, 150 U. S. 221, 37 L. Ed. 1059.

Peters v. *Active Mfg. Co.* 21 Fed. 319.

Roberts v. *Ryer,* 91 U. S. 150, 23 L. Ed. 267.

Smith v. *Nichols,* 21 Wall. 112, 22 L. Ed. 566.

XXXII.

COMITY. (Page 125.)

Mast, et al. v. *Stover Mfg. Co.* 177 U. S. 485.

XXXIII.

APPENDIX A. A GEBRAUCHSMUSTER IS A PATENT.
(Page 127.)

American Chain Co., Inc. v. *Bethlehem Bumper Corp.* 25 Fed. (2nd) 759.

Commercial Acetylene Co. v. *Acme Acetylene Co.* 192 Fed. 321, 112 C. C. A. 573.

Elizabeth v. *Pavement Co.* 97 U. S. 126, 24 L. Ed. 1000.

Ireson v. *Pierce,* 39 Fed. 795, 798 (C. C. D. Mass.)

Leeds & Catlin Co. v. *Victor Talking Machine Co.* 213 U. S. 301, 29 S. Ct. 495, 53 L. Ed. 805.

Milburn Co. v. *Davis,* 270 U. S. 390, 46 S. Ct. 324, 70 L. Ed. 651.

Permutit Company v. *Paige & Jones Chemical Co., Inc.* 22 Fed. (2nd) 916.

Permutit Company v. *Wadham, et al.* 294 Fed. 370, 13 Fed. (2nd) 454.

Safety Gas Lighter Co. v. *Fischer Bros. & Corwin,* 236 Fed. 955.

Sexton v. *Reis,* Interference No. 37,770, decision by the Board of Examiners-in-Chief, Appeal No. 8405, June 26, 1915; affirmed by the Commissioner of Patents, April 7, 1916.

Sirocco Engineering Co. v. *Sturtevant Co.* 220 Fed. 137, 136 C. C. A. 91.

Societe Anonyme, etc. v. *General Electric Co.* 97 Fed. 604.

Steiner v. *Schwartz,* 148 Fed. 868.

Permutit Company v. *Graver Corporation,* 43 Fed. (2nd) 898.

DISCUSSION OF POINTS AND AUTHORITIES.

I.

THERE IS NO CONFLICT OF THE SAME MATTER BETWEEN THE DECISIONS OF THE COURTS OF APPEALS FOR THE SECOND AND SIXTH CIRCUITS ON THE ONE PART AND THE COURT OF APPEALS FOR THE SEVENTH CIRCUIT ON THE OTHER PART.

Respondent will show that there is no conflict *on the same matter* between the decisions of the Courts of Appeals for the Second and Sixth Circuits on the one part, and the Court of Appeals for the Seventh Circuit on the other part, for the reason that the evidence in the Seventh Circuit case is new and different in many material respects, notwithstanding petitioner's statements to the contrary.

Among these material differences, which are considered more in detail in respondent's brief in opposition to the petition for writ of certiorari, are the following:

1. *The Rundschau Water Softening Apparatus* (*Respondent's Physical Exhibit No.* 19), *was not in evidence in the cases before the Second and Sixth Circuit Courts of Appeals.*

This is an upflow water softener.

Judge Lindley, with this new evidence and supporting testimony, held:

> "The evidence in the instant case is conclusive to the effect that upward flow softeners are in fact of greater utility and efficiency than downward flow softeners." (R. 562) 37 Fed. (2d) 385, 389.

The attitude of the Courts of Appeals for the Second and Sixth Circuits, with different evidence or lack of evi-

dence before them, is specifically expressed in the opinion of the Sixth Circuit Court of Appeals as follows (13 Fed. (2nd) 454, at 456):

> "Nor does it follow that in this particular environment there is no patentable distinction between the downflow and the upflow. The former works satisfactorily, and it seems probable, if not certain, that the latter would not."

The Circuit Court of Appeals for the Seventh Circuit, through Judge Evans, in its opinion stated (R. 684):

> "In the instant suit the advantages or disadvantages of an apparatus calling for a downflow of water through the zeolites were sharply contested. The District Judge found, contrary to the observations of the court in the last cited case, 'the evidence in the instant case is conclusive to the effect that upward flow softeners are in fact of greater utility and efficiency than downward flow softeners.'
>
> An examination of the evidence not only substantiates the finding of the District Court but persuasively supports it. In view of the object to be accomplished, it would seem difficult, if not impossible, to say there was either merit or novelty in providing means which call for the downflow rather than the upflow of water through the bed of zeolites. * * *"

For a fuller argument on this point see pages 6 to 9 inclusive of respondent's brief in opposition to petition for writ of certiorari and page 35 of this brief.

2. *Gans article of April* 15, 1909 (R. 517); *Petitioner's translation thereof* (R. 450); *respondent's translation thereof* (R. 351).

Certain testimony of Mr. Waterman, petitioner's patent expert, in the instant case but not in the other cases, supports respondent's contention that said Gans article is a complete anticipation of the claims in issue, including the feature of the free and unconfined zeolite bed (R. 70), petitioner's patent expert Waterman stating:

> "Where Gans mentioned any place back-washing,

my same definition obtained, that is, that the bed of zeolites is free and unconfined."

For fuller argument see pages 9 to 14 of respondent's brief in opposition to petition for certiorari and page 49 of this brief.

3. *Petitioner's letter of March* 18, 1920, *by its technical expert, Thos. R. Duggan, to Dr. Charles F. McKenna* (*Respondent's Exhibit No.* 62) (R. 546) *was not in evidence in the other cases.* (*Filter Art.*)

Said letter discusses the water softening and water filtering art, and reads in part as follows:

"The process is a very simple one as you will notice by the literature which we enclose. It is nothing more or less than a filter, but the bed, instead of being sand or some other mineral, is a zeolite which is manufactured in our factory in Brooklyn."

Complete argument found on pages 14 to 16 of respondent's brief in opposition to petition for writ of certiorari and on page 86 of this brief.

4. *Commercial success.*

Testimony in the case at bar but not in the other cases shows that petitioner's commercial success resulted from the mineral zeolite, sand filters, limestone water softeners, carbon dioxide recording instruments for use in combustion work, a continuous blow-off system for boiler plants, and manganese removal systems, in addition to zeolite water softeners. (R. 23 and 89.)

Complete argument found on pages 16 and 17 of respondent's brief in opposition to petition for writ of certiorari and on page 120 of this brief.

5. *Weiss thesis* (R. 521); *drawings thereof* (R. 524) *and translation thereof* (R. 525), *is new evidence in this case.*

Respondent will show, as trial Judge Lindley stated in holding claims 1 and 5 invalid in the instant case:

> "* * * Having the greatest respect for those courts, I have taken great care in my examination of the prior art and of the evidence here presented in order to determine whether my convictions in the contrary direction are proper. *To me it seems manifest that had this situation been as fully presented to the various courts before whom there has heretofore been litigation as here, there could have been but one conclusion.*" (R. 566.) (Emphasis ours.)

Complete argument found on pages 17 to 20 of respondent's brief in opposition to petition for writ of certiorari and on page 82 of this brief.

II.

GANS' DISTORTED AND INVALID CLAIMS.

Conflicting distorting forces of internal scope enlargement and diminution and external anticipatory compression, have collapsed many a claim structure, especially when that structure was weak and ill-founded in its inception.

Claims 1 and 5 of the Gans patent No. 1,195,923 (Trans., 584) originally given life by what Judge Tuttle in *Permutit* v. *Wadham*, 294 Fed. 370 at page 368 characterized as a false oath, which when discovered caused an S. O. S. filing of a disclaimer for reduced claim scope, then by court interpretation given a baseless injection of limitation to maintain life, now appear in their overadjusted and manipulated condition before this court, and plead for new interpretation and new enlargement.

When District Judge Lindley of the Seventh Circuit studied into the situation it was, of course, perfectly clear to him, that the claims in issue are clearly invalid.

He therefore so held. (R. 555, 570.) 37 Fed. (2nd) 385, 393.

The Seventh Circuit Court of Appeals, Judge Evans giving the opinion, on October 20, 1930, affirmed said decision, and additionally held that respondent's "presently used structures" (upflow water softeners) do not infringe claim 5. (R. 679, 689.) 43 Fed. (2nd) 898, 903.

Claim 1, of course, is not infringed because, by disclaimer, it is limited to a "downflow softener."

III.

GANS COULD NOT FOOL THE GERMAN GOVERNMENT AS HE DID THE UNITED STATES GOVERNMENT. HE KNEW AND THE GERMAN GOVERNMENT KNEW OF THE STATUTORY BAR (MORE THAN TWO YEARS PRIOR PUBLICATION) AGAINST THE GRANT OF A VALID PATENT. THEREFORE GANS DID NOT APPLY FOR A PATENT IN HIS OWN COUNTRY (GERMANY), BUT TOOK A FALSE OATH TO DECEIVE THE UNITED STATES GOVERNMENT AND OBTAIN AN INVALID PATENT.

It is significant that Gans has no German patent nor even a German Gebrauchsmuster (petty patent) corresponding to U. S. patent 1,195,923 in suit. See page No. 12 Gans file wrapper (Defendant's Ex. No. 65) in which he said,

> "that no application for patent on said improvement has been filed by him or his representatives or assigns in any country foreign to the United States except as follows:
> In Great Britain No. 3870 bearing dated 15, 2. 11.
> In Canada 4th May 1911."

Gans knew and his assignee and undoubtedly the German Patent Office knew of Gans' printed publication of April 15, 1909 (Trans., 515 at 517, Translation 351), of the Feldhoff printed publication of September 7, 1907

(Trans., 477 and 479), of the Technische Rundschau printed publication of January 27, 1909 (Trans., 461, 465 and 469), of the German Leister patent No. 211,064 (Trans., 653) and of the Gebrauchsmuster patents Nos. 341,512 (Trans., 664 and 665) and 313,671 (Trans., 660 and 661) among other references, each of which is a complete anticipation of the alleged invention covered by claims 1 and 5 of the Gans U. S. patent in suit.

Gans knew that he could not deceive the German Patent Office because all the facts were known in Germany. So he did not file an application in Germany for a German patent nor even for a Gebrauchsmuster.

However, believing that the United States Patent Office did not know of the anticipatory German publications and German patents (and the Gans file wrapper shows it did not) Gans was perfectly willing to deceive the United States Government and take a false oath, including the following, set forth on page 12 of the Gans file wrapper:

> "That to the best of his knowledge and belief the invention has not been in public use or on sale in the United States *nor described in any printed publication or Patent in this or any foreign country to the United States for more than two years prior to this application.*".

By thus conducting himself, Gans procured his patent. A study of the Gans file wrapper will show that had the United States Patent Office known of the German prior art, the patent never would have been granted.

For this reason alone the Gans patent in suit is invalid and is not entitled to favorable consideration.

District Judge Lindley of the Seventh Circuit, in discussing one of these foreign references, namely, the Gans published article of April 15, 1909, stated (37 Fed. (2nd) 385 at page 388), (Trans., 560):

"Gans, the only witness who could have thrown

more light on this subject, residing in Germany, was not brought to this country as a witness, nor was his deposition taken. * * * The conclusion is unavoidable that Gans in April, 1909, intended to describe, and did describe, a filter with the essential elements of his later application and one containing the now alleged implied essential element of a free and unconfined space above the zeolites. He disclosed a water softening apparatus composed of a casing, a filter bed of sand, a layer of zeolites disposed thereon, means for permitting the passage of water through the casing, means for cutting off the supply of water on the exhaustion of zeolites, the suggestion of regeneration to be accomplished by washing off the zeolites with a salt solution and of back washing for rinsing."

In this same connection, attention is directed to the decision of the Seventh Circuit Court of Appeals (R. 685), 43 Fed. (2nd) 901; Judge Evans stating:

"* * * In a study of the various translations and in the differences that arise over them, it is significant that Gans himself did not testify or explain or attempt to explain what appellee asserts was fatal to his right to a patent in the United States. He also failed to explain why he did not apply for a patent in Germany on the apparatus here under consideration. Gans was evidently an inventor who knew the value of patents and the record shows he secured several of them in the United States. His failure to secure one in Germany suggests, at least, that he was perhaps embarrassed by this prior art."

Again Judge Lindley in his decision, at page 391 (Trans., 567):

"The reasons ordinarily urged against foreign teaching do not find the usual basis here, for the applicant resided in Germany; the publications were published there, some by himself, some by his associates, some by scientists like himself. It was in America that he applied for a patent, upon claims never submitted to his own government, to a Patent Office obviously without notice of these German pub-

lications. He assigned his application, and eventually it came to the plaintiff, some of the officers of which were associated with him in Germany. Yet we do not have his story of his experiences."

Judge Lindley and the Seventh Circuit Court of Appeal judges clearly sensed the situation of how the United States Government was deceived by Gans.

On this same point while it is true that Judge Tuttle was reversed by the Circuit Court of Appeals for the Sixth Circuit, in *Permutit* v. *Wadham, et al.*, 294 Fed. 370, it is submitted that the reversal was not justified by the facts, and it is believed that it would be well worth your Honors' time to read Judge Tuttle's opinion. The concluding paragraphs of the opinion are as follows:

"I do not think that there was anything patentable in the Gans apparatus, even over what was cited by the Patent Office; but after five years of wiggling, first dodging one way and then the other, making representations to the Patent Office that were not true, the two claims here involved, together with four others, were finally wormed out of the Patent Office. I do not remember ever reading a claim that assumed to go a shorter distance than claim 5. The claim that invention exists in providing a structure with an outlet at the lowest point to enable complete drainage is about the slimmest claim that I have seen in a patent for a long time. There is nothing to it, and it is not worth consideration. Claim 1 is just as false the other way. It claims a broad invention, and one that would be valuable if it could stand up; but it cannot, for it claims a combination that is old. And the most objectionable feature is that Gans and the Riedel people knew all the time that they were not entitled to this patent. They had knowledge of this prior art which would defeat the claims in an instant.

The fact that the patentee knew all along of this prior art is sufficient to defeat the purposes for which the disclaimer was filed. A disclaimer can only be availed of where, through inadvertence, accident, or mistake, a patent has been granted for

more than the applicant was entitled to claim. In this case the soliciting and acceptance of claim 1 was deliberate and with full knowledge of the prior art. The oath was false, because these patents and publications were all dated more than two years prior to the filing of the Gans application. It makes no difference that plaintiff was not formally represented in the prosecution of the Gans application. Plaintiff can have no better right to file a disclaimer than Gans, the inventor, or the Riedel Company, the patentee, would have had, and neither of them could say that claim 1 was solicited by inadvertence, accident or mistake. They would not be heard to so contend, especially after the lapse of four years between the granting of the patent and the filing of the disclaimer, during which all the advantage flowing from ownership of the patent with the invalid claim had been enjoyed by the plaintiff. The disclaimer is void and of no effect to save the patent from anticipation.

As indicated above, for this reason alone, the patent should be held invalid."

IV.

GANS' PATENT NO. 1,195,923, IN SUIT.

This patent discloses a casing *a* having a lower perforated plate upon which is supported a layer *g* of quartz or sand, upon which in turn is mounted a layer or bed *f* of zeolites or hydrated alumino-silicates. Above the latter is another perforated plate *c* which supports a layer *e* of quartz or sand. A hard or raw water supply pipe *k* supplies water to the inlet pipe *l* at the upper end of the casing, whereby such water flows downwardly through the sand filter *e* where some of the mechanically suspended material is withdrawn from the water, the water then continuing its downward course through the layer *f* of zeolites, where the hard water gives up to the zeolites its calcium and magnesium and takes from said zeo-

lites sodium, whereby the water is softened and passes downwardly through the pipe *j* connected to the lowest point of the casing *a* and then passes into the soft water service pipe *n*.

When the zeolites have become exhausted, they are to be regenerated. Prior to regeneration, the zeolites are to be backwashed. However, no pipe connections are shown or described by means of which the backwashing operation may be performed. Furthermore, no pipe connections are shown at the upper end of the casing for withdrawing the dirt and slime. Nothing further will be said at this time about these deficiencies in the Gans patent.

The Gans patent shows a pipe, controlled by a valve *o*, through which a salt solution may be conducted and passed to the inlet pipe *l* for permitting the passage of the regenerating solution downwardly through the sand filter *e* and downwardly through the layer of zeolites *f* and sand layer *g*, whereupon the zeolites give up the collected calcium and magnesium and take on sodium. The brine is then drained through the pipe *j connected* to the *lowest point* of the casing and passed to the sewer.

While the subject matter involved in this litigation is an apparatus for the zeolite type of water softener, plaintiff agrees that this Gans patent in suit does not cover zeolites. Plaintiff-petitioner* agrees that the patent does not cover broadly the idea of softening water by means of zeolites; does not cover broadly the regeneration of zeolites; does not cover broadly the rinsing of said zeolites, and does not cover broadly backwashing. (Trans., 73.) The Gans patent does not even cover the combina-

* For convenient reference, the parties herein from this point on, will be referred to by their designations in the District Court, namely, the petitioner, The Permutit Company, as plaintiff, and the respondent, Graver Corporation, as defendant.

tion of elements nor their functions set forth in claim 1 therefor, for on March 2, 1920, because of the discovery of the Feldhoff published article of September 7, 1907 Defendant's Ex. No. 32 (Trans., 477 and 479)), (see stipulation, Defendant's Ex. No. 42 (Trans., 505)), the following disclaimer was made by Gans' assignee, the plaintiff herein:

> "hereby disclaims from the scope of Claim 1 of patent No. 1,195,923, any water softening apparatus including a layer of zeolites or hydrated alumino-silicates disposed upon a layer of sand or quartz in which the water to be softened is so introduced into the casing that it passes upwardly through said layer of zeolites."

Claim 1 therefore is limited to an obviously old and invalid combination of a zeolite water softener with the downward directional flow also shown to be old and inferior in the zeolite water softener art. More will be said on this point later.

V.

GANS FILE WRAPPER ON CLAIM 1.

By referring briefly at this time to the file wrapper (Defendant's Ex. No. 65) of the Gans patent in suit, it will be noted that there is a further hidden limitation in claim 1 when it is compared with a canceled claim, original claim 2 on page 10. Claim 1 of the patent among other things calls for a layer of sand or quartz and a layer of zeolites or hydrated alumino-silicates disposed on the layer of sand or quartz, whereas original claim 2 differed from claim 1 of the patent only in not mentioning *sand or quartz.* Original claim 2 was canceled in view of the references of record, so it was by virtue of the fact that claim 1 of the patent includes a *layer of*

sand or quartz for supporting the layer of zeolites that the claim was allowed to issue.

The claims, in the Office Action of October 1, 1912 (file wrapper, page 18), were rejected on the three Bommarius patents, Nos. 519,565 (Trans., 598), 632,091 (Trans., 608) and 707,899 (Trans., 624), the Examiner stating:

> "The claims are all rejected as merely involving the substitution of the filtering material disclosed in applicant's patent No. 960,887 for that disclosed in the patents cited above."

The Gans patent No. 960,887 discloses zeolites and states that water may be completely softened thereby, and that the exhausted zeolites may be regenerated by a solution of common salt.

In the amendment of September 17, 1913 (file wrapper, page 20), in response to the Office Action of October 1, 1912 (file wrapper, page 18), Gans makes this argument:

> "In regard to the references, none shows an apparatus for softening water; none shows the combination essentially involved in such an apparatus. The purpose of the applicant is to soften water, that is to say, to change the salts of lime and magnesium into corresponding sodium salts, whereas the apparatus of the references are merely filters wherein mechanical impurities are removed from the water."

In the Office Action of October 9, 1913 (file wrapper, page 24), the Examiner stated:

> "The claims are again rejected as reciting nothing more than the substitution of the water treating means disclosed in applicant's patent of record, for the water treating means disclosed by each of the other three references of record. The claims are further rejected as disclosing nothing more than the mere double use of portions of the apparatus disclosed in the first three references of record."

Then in the amendment of August 26, 1914 (file wrapper, page 25), Gans canceled claims 2 and 3 inserted by the amendment of August 3, 1912 (file wrapper pages 14 and 15), and permitted claims 4 to 7 inclusive, inserted by the same amendment, to stand. Said claim 4 is now claim 1 of the patent in suit, with the latent limitation "of a layer of sand or quartz."

In such condition, the application was allowed. It is to be borne in mind that the Patent Office didn't know of the existence of the Feldhoff article of September 7, 1907 (Defendant's Ex. No. 32); the Technische Rundschau article of January 27, 1909 (Defendant's Ex. No. 24); the Gans article of April 15, 1909 (Defendant's Ex. No. 47), all three German publications; the German Leister patent No. 211,064 (Defendant's Ex. No. 34); German Gebrauchsmuster patent No. 314,512 (Defendant's Ex. No. 28), German Gebrauchsmuster patent No. 313,671 (Defendant's Ex. No. 30), and Weiss Thesis (Defendant's Ex. No. 60) (Trans., 525) among others. *As shall be pointed out later, had these references, which were known at that time by Gans and his assignee, been known by the United States Patent Office, the Gans patent never would have been issued.* These references, all of which completely disclose the combination set forth in claims 1 and 5 for performing the identical functions of softening raw water, regenerating exhausted zeolites, back washing and rinsing, will be discussed later.

Through over-liberal treatment by the Courts of Appeals of the Second and Sixth Circuits, this claim 1 and also claim 5 were further limited for the purpose of sustaining them. See for example the statement made by Judge Denison, speaking for the Sixth Circuit Court of Appeals, in *The Permutit Company* v. *Wadham, et al.*, 13 Fed. (2nd) 454, at 458:

"It is true that under the construction which we

give the patent, and in order to sustain the patentable novelty of the device, the claim must be limited so as to involve the use of a zeolite bed which is free and unconfined upon the top, and that the specification does not expressly state this limitation nor does the exact language of the claim compel it."

Therefore, in addition to the disclaimer with respect to upflow softening in claim 1 as a result of the Feldhoff article of September 7, 1907, claims 1 and 5, even in a down-flow softener, had to be treated kindly by reading into said claims a further limitation, which plaintiff admits does not appear in said claims nor in the specification.

VI.

GANS' FILE WRAPPER ON CLAIM 5.

Referring for the moment to claim 5 of the Gans patent in suit, it will be noted that it is identical with claim 1, with the exception that it has in addition the limitation, namely, "and means connected to the lowest point of the casing for removing the salt solution so introduced."

At this moment, it will be enlightening again to refer to the Gans file history. This claim before it was modified by the limitation of "means connected to the lowest point of the casing for removing the salt solution so introduced," was filed in the Patent Office for the first time on March 26, 1915 (file wrapper, page 35), almost five years after the application was filed.

Said claim 5, by the Office Action dated April 5, 1915 (file wrapper, page 37), was rejected

> "as disclosing nothing more than a double use of the apparatus disclosed by each of the patents to Bommarius."

In an amendment dated June 30, 1915 (file wrapper, page 39), Gans stated:

> "Bommarius does not show a filter containing a layer of zeolites or alumino-silicates. After all is said and done, Claim 5 is very specific."

Further down on the same page, Gans states:

> "He has made an important change in the art of filters; and he has done this by adding a new element."

The claim was again rejected on July 13, 1915. (File wrapper, page 40.)

In an amendment dated April 21, 1916 (file wrapper, page 41), a falsification, unknown to the Patent Office, was clearly stated when the following was set forth:

> "Heretofore the art has not provided a household apparatus or an apparatus for use in hotels, for instance, which would permit softening hard water on the premises; and it has long been a *desideratum* in the art to produce a successful apparatus for accomplishing this purpose."

On May 6, 1916, in another Office Action (file wrapper, page 44), claim 5 was finally rejected as

> "merely for a double use of the devices shown in either of the patents to Bommarius of record."

Then on June 16, 1916 (file wrapper, page 46), claim 5 was amended by adding

> "and means connected to the lowest point of the casing for removing the salt solution so introduced."

In the remarks accompanying that amendment (file wrapper, page 48), Gans made it clearer that the

> "applicant's structure includes zeolites, which are the heart of the thing and the thing to which the other elements are only a body."

Then lower down on page 48 of the file wrapper Gans said:

> "To emphasize still further this point, the specifi-

cation and claims have been amended to state that *the connection for withdrawing the salt solution is at the lowest point of the casing.* In a structure such as that of Bommarius where nothing is introduced but water, either for purification or flushing, the nature of the connections is not so material. But where another liquid is introduced as applicant must introduce it, and this other liquid is a heavy solution, the connections must be adapted to deal with it. The salt solution must always be withdrawn from the *lowest point* of the system since if it has an opportunity to pocket anywhere, the next charge of water will be contaminated and salt solution will further be wasted." (Emphasis ours.)

Then in discussing the Bommarius patent No. 707,899 (Trans., 624) (file wrapper, page 49), Gans stated:

> "There would inevitably be salt solution in the bottom of the casing lying there as a distinct body of liquid and mixing by diffusion with the water thereafter passed through. The same is absolutely true of the structure of Fig. 2. The only point of withdrawal is well above the bottom of the chamber 34."

Then on page 50 of the file wrapper, in discussing the Bommarius patent No. 519,565 (Trans., 598), Gans stated in connection with his device:

> "and the connection or the bottom would have to be so shaped to permit *absolute* withdrawal of the salt solution; so that the salt solution would accumulate at one point whence it could be withdrawn."

It is apparent therefore that claim 5 additionally is limited to means connected to the *lowest point,* and no other point of the casing, for removing the introduced salt solution.

VII.

DEFENDANT'S UPFLOW SOFTENER DOES NOT INFRINGE CLAIMS 1 AND 5. PLAINTIFF ADMITS CLAIM 1 IS NOT INFRINGED, BECAUSE BY DISCLAIMER, IT IS LIMITED TO A "DOWNFLOW" SOFTENER. CLAIM 5 IS NOT INFRINGED BECAUSE DEFENDANT'S "UPFLOW" SOFTENER DOES NOT HAVE "MEANS CONNECTED TO THE LOWEST POINT OF THE CASING FOR REMOVING THE SALT SOLUTION SO INTRODUCED."

Defendant's upflow softener is illustrated by Plaintiff's Exhibit No. 16.

As pointed out hereinabove, plaintiff filed a disclaimer with respect to claim 1 whereby said claim is limited to a downflow softener; therefore, claim 1 is not infringed by defendant's upflow water softener.

Among other things, claim 5 is limited to "means connected to the *lowest point of the casing* for removing the salt solution so introduced." (Emphasis ours.) Such means is the pipe *j* in the Gans patent, which is connected to the *lowest point of the casing.*

Defendant's upflow softener does not have means connected to the *lowest point of the casing* for removing the salt solution so introduced. Upon cross-examination of plaintiff's witness Mr. Tiger on this point, the following is quoted (Trans., 30):

> "Q. I am asking you whether or not that pipe 10 is connected to the lowest point of the casing. The answer is yes or no.
>
> A. Why, the pipe is not physically connected to the lowest point.
>
> Q. It is not connected to the lowest point of the casing, is it then?
>
> A. Not physically connected to the lowest point.

Q. That is the best answer you will give the court, is it?

A. That is the best answer I can give, yes, sir.

Q. It is not mechanically connected to the lowest point of the casing, is it?

Mr. Cooper: 'Is not the question how far the outlet of the pipe is from the casing'?

The Court: 'It is practically obvious to the court that the pipe does not rest upon or touch the lowest point of the container. Therefore it could not possibly be connected to the lowest point of the casing. It is perfectly obvious to me, and I don't need this witness or any other witness to tell me it is or it is not. The diagram shows itself that it does not touch the bottom, it rests upon something else. Let's not waste any time and don't quibble, Mr. Witness.' "

Of course it is perfectly obvious to your Honors and to anyone who is not prejudiced in behalf of plaintiff-petitioner, that the pipe 10 in defendant's upflow softener, shown in Plaintiff's Exhibit No. 8 (Trans., 265), is not connected to the *lowest point of the casing.*

It is perfectly obvious, therefore, that claim 5 is not infringed by defendants's (respondent's) upflow softener, and the Seventh Circuit Court of Appeals so held, 43 Fed. (2nd) 898, 903. Judge Evans stated:

> "Finally it might be added that appellee's structures have their openings near the bottom but not at the lowest point of the casing, and therefore do not infringe claim 5. This is not so as to certain discarded structures, but, as to its presently used structures, infringement of claim 5 is not shown."

(See Trans., 84, quoting from Mr. Waterman's testimony in Permutit v. Wadham, *et al.,* in which Mr. Waterman, petitioner's patent expert, insists that the lowest point connection of the pipe to the casing is the feature of the invention that is recited in claim 5.)

The quotations appearing hereinabove taken from the file wrapper of the Gans patent in connection with claim 5, clearly show that claim 5 is limited to the pipe *j* as

being actually, physically and mechanically connected or joined to the lowest point of the casing. This is clear among other things from Gans' file wrapper statements on page 49, in discussing the Bommarius patent No. 707,899, in connection with Figure 2 of the Bommarius patent. Referring to said Figure 2 of the Bommarius patent No. 707,899, Gans said:

> "The only point of withdrawal is well above the bottom in chamber 34."

Referring to Figure 2 of the Bommarius patent, it will be noted that pipe 22 is the connection referred to, and Gans distinguished his claim 5 by insisting that the last clause thereof meant that the means or pipe *j* is connected to the lowest point of the casing rather than a point higher than the lowest point. Of course, there is only one interpretation to give to the last element of claim 5, and even the Court of Appeals of the Sixth Circuit, which was extremely favorable to the Gans patent, took exactly the same position. For example, that court said, in *Permutit* v. *Wadham, et al.*, 13 Fed. (2nd) 454, at 456:

> "Such a process calls for chemical actions and reactions, as distinguished from the mechanical work of the ordinary water filter, thereby involving chemical problems which the most competent experts do not foresee, but in which apparently small steps turn out to be vital, as, for example, *the necessity of draining the salt water from the very bottom instead of from a more convenient point a little higher.*" (Emphasis ours.)

It is apparent therefore that the Court of Appeals for the Sixth Circuit would hold that the pipe 10 in defendant's upflow softener (Plaintiff's Ex. No. 8, Trans., 265), is not connected to the lowest point of the casing, and therefore, does not infringe.

Petitioner now wants this court to broaden out claim

5 to find infringement. Such a finding we submit would be unjust, unwarranted and unfounded.

More will be said on this point in connection with the question of validity of claim 5 wherein it will be shown that the Rundschau article of January 27, 1909, among others, discloses the full combination set forth in claim 5, including means connected to the lowest point of the casing for removing the salt solution so introduced.

For the same reason, it is perfectly apparent that defendant's 1925 downflow softener, shown by Plaintiff's Exhibit No. 15, does not infringe claim 5, for the pipe 10 in that arrangement is not connected to the *lowest point of the casing.* It is arranged identically the same as the pipe 10 in defendant's upflow softener. (Plaintiff's Ex. 8, Trans., 265.)

VIII.

PLAINTIFF'S BROOKLYN TESTS OF DEFENDANT'S UPFLOW SOFTENER MERE SMOKESCREEN.

Plaintiff, realizing that defendant's upflow softener has no means connected to the lowest point of the casing for removing the salt solution, or for any other reason, then attempted to throw a smokescreen by conducting tests on defendant's upflow softener in an effort to show that all of the salt could be washed out of defendant's upflow softener by a down rinsing action. Plaintiff failed to prove its point.

Even if plaintiff could by down rinsing force all the salt upwardly through the pipe 10 in Plaintiff's Exhibit 16, it would be done by means not covered by claim 5; it would be done by a different combination; a different arrangement of elements.

Plaintiff made two tests, one on March 27, 1929, and

one on May 15, 1929. In the first test, plaintiff must be charged with the responsibility of doing three things, two of which were absolutely unfair, and the third of which also inured to the benefit of plaintiff. One of these irregularities took the form of a ribbon of paraffine located opposite a notch or notches in the lower notched part of the collar in the bottom of the casing, the result of which caused a more intensified flow of rinse water through the other notches, with the hope of washing a greater quantity of salt solution from the bottom of the casing. Dr. Moses, defendant's witness, on inspection of defendant's upflow softener after the test, found the paraffine, and defendant's counsel caused the fact to be stipulated in the stipulation of April 24, 1929. (Plaintiff's Ex. 18, Trans., 314.)

In the second place, plaintiff instead of using five drops of B. & B. soap solution all at once in 40 c.c. of water in determining whether or not the water was hard or soft, used first two or three drops at a time, then agitated the fluid, and then successfully added one or two drops more at a time, as brought out in the stipulation of April 24, 1929. (Trans., 316.) There is a real discrepancy between the two tests. It is an established fact that if five drops of standard B. & B. soap solution are added all at a time, the lather will be formed more quickly and more permanently than is the case if two or three drops are first placed in the water, and after shaking, one or two more drops are added. In other words, plaintiff was anxious to use all the rinse water it could before soft water was indicated, with the hope of washing out all of the sodium salt solution. To show that there is a discrepancy, plaintiff's soap test method showed that the effluent water did not react as soft until eighteen minutes of down rinsing had elapsed (see stipulation, Trans., 316), whereas with the correct test, that is, with

five drops of B. & B. soap solution added at one time, soft water was shown to exist at the end of fifteen minutes. (See the stipulation, Trans., 316.) It is apparent therefore that plaintiff washed three minutes longer, using 171.6 additional gallons of water with the hope of getting all of the salt out on the down rinse, but plaintiff did not succeed.

The third advantage which plaintiff took was in the use of rinse water artifically hardened by calcium sulphate, the Brooklyn city water being between 1½ and 2 grains hardness, and 16 grains hardness being added in the form of calcium sulphate. Plaintiff's witness, Mr. Tiger, admitted that water containing mainly calcium sulphate only occasionally is found in nature. (Trans., 86.) It is a fact, and was established in the testimony, that calcium sulphate in passing through the soft zeolite bed, is changed to sodium sulphate, which in turn has an appreciable effect upon retarding the soap test. (Trans., 97.) As stated by Dr. Moses there was no necessity for hardening the rinse water with anything. (Trans., 128.) In this way again, an increased amount of water would be used for an attempted washing out of the sodium salt solution before the water would be indicated as soft.

Therefore, plaintiff took several advantages in attempting to have this test of defendant's upflow softener develop the way plaintiff chose and to the detriment of defendant. In spite of all, plaintiff failed. According to the stipulation of April 24, 1929, it rinsed downwardly for twenty-five minutes, using 1,430 gallons of water, and there was still an appreciable amount of sodium salt solution in the bottom of the casing and also distributed throughout the major portion of the zeolite bed. It was found that at the end of a fifteen-minutes' interval after the twenty-five-minute rinse run, an increased amount of salt collected in the bottom of the cas-

ing, and that the amount of salt in the bottom of the casing continued to increase with the elapsed time.

Then, in the same test, plaintiff up rinsed the zeolite bed for ten minutes, using 740 additional gallons of water before the salt was washed out of the casing, but it is to be noted that the final quantity of salt was not ejected from the casing by downward rinse through the bed and upward ejection through the central upwardly extending pipe. The final salt solution could be gotten rid of only by washing that salt solution upwardly through the bed of zeolites itself, and as clearly brought out, the upward rinse which defendant practices performs a twofold function: first, it performs the function of washing out the hard water which is on top of the zeolite bed and which has accumulated there because of the first or down rinsing action. This collected hard water is passed outwardly through the pipe which has an opening in the upper part of the casing and which leads to the sewer. The second function performed by the up rinse is the regeneration of the upper layer of zeolites which has become exhausted by the first or down rinsing action.

The plaintiff's second test was no better than its first test in so far as results are concerned. Dr. Moses has clearly established the fact that even a very dilute sodium salt solution has regenerative value (Trans., 94), as shown for example by the curve, Defendant's Exhibit No. 64. Even then plaintiff ran its test on defendant's upflow softener in the way it chose and not in the way that defendant instructs its operators as set forth in its operating instructions. As brought out in the testimony of Dr. Moses (Trans., 93), the defendant instructs the operators of defendant's upflow softener to stop the down rinse action and to start the up rinse action when there is a faint salt taste without bitterness in the effluent, at which time there are from 6,000 to 18,-

000 p.p.m. of chloride, as expressed by the chloride radical Cl. (Trans., 123 and 124.) Dr. Moses makes it clear that such a sodium salt solution is sufficiently concentrated to have quite a regenerative effect upon the upper exhausted layer of zeolites. (Trans., 125.) Defendant therefore has two real functions for not washing out all of the sodium salt solution from the bottom of the casing by down rinsing action, even though such impossibility were a possibility.

As brought out hereinabove, plaintiff's tests are immaterial anyhow; they are merely a smokescreen, for whether or not it would be possible for plaintiff to wash out all of the sodium salt solution in defendant's upflow softener by a down rinsing action, the fact still remains that defendant does not have means connected to the *lowest point of the casing for removing the salt solution*, as called for in claim 5. It would be impractical from a water wasteage point of view (Trans., 95) to attempt to wash out all of the salt by down rinsing in defendant's upflow softener, and such excess use of rinse water would harden a greater portion of the zeolite bed, thereby reducing the softening capacity of the zeolite bed. It is perfectly evident that plaintiff's allegation of infringement of claim 5 by defendant's upflow softener is ill-founded, for defendant's upflow softener does not have means connected to the lowest point of the casing for removing the salt solution.

IX.

CLAIM 5 IS CLEARLY INVALID. IT IS MET IN EVERY MINUTE DETAIL.

Whether or not by any extreme interpretation of claim 5 it could be held to be infringed by defendant's upflow softener, said claim is clearly invalid in view of the prior

art and particularly the Technische Rundschau article of January 27, 1909. (Trans., 461 to 469.) While claim 5 cannot possibly be read on defendant's upflow softener, it reads perfectly upon the device disclosed in the Rundschau article in question.

Attention is directed to the Rundschau article, Defendant's Exhibit No. 24, and the translation thereof, Defendant's Exhibit No. 25. (Trans., 464.) This article, which was published more than two years prior to the filing date, August 5, 1911, of the application resulting in the Gans patent in suit, clearly discloses a zeolite type of water softener as defined by claim 5, and in addition thereto, other elements and details of constructions and instructions as to the operation of the device. For example, in the first paragraph of the translation, Defendant's Exhibit No. 25, it is clearly stated that the device is for softening water by the use of a permutit filter, the word "permutit" referring to zeolites, the permutit giving up sodium, the softening element, and taking in exchange therefor calcium and magnesium, the hardening elements. This paragraph also brings out the fact that the zeolites upon becoming exhausted are not useless but may be regenerated by being treated with sodium salt solution, whereby the permutit or zeolites then take on sodium and give up calcium and magnesium.

The drawing and description disclosed by said article show that the device includes a cylindrical casing *a* with a conical bottom. Just above the cone-shaped bottom, there is a perforated plate *b* on which there is a layer of coarse gravel, then a layer of fine gravel upon which the bed of zeolites or permutit rests. According to the description, the bed of permutit or zeolites is covered with a loose uniform layer of excelsior which is held down by a divided perforated cover, over which canvas is stretched. Directly thereabove is outflow piping includ-

ing pipes *d* through which the softened water passes out of the casing to the soft water service line. The raw or hard water passes to the casing through a pipe *h* which enters the bottom of the casing at its central or lowest point, and is connected to a main distributing pipe below the perforated plate *b* and a plurality of perforated lateral pipes *c*. The supply of raw water is controlled by a float *e* in the top of the casing and operatively connected to a valve in the supply pipe *h*. The raw water in passing into the lower end of the casing is distributed by means of the net of pipes *c* so that the water rises as a body uniformly upwardly through the bed of zeolites and emerges therefrom as soft water and passes out of the casing through the soft water service pipes *d*, as hereinabove mentioned.

The article brings out the fact that when the permutit or zeolites are exhausted, they are to be regenerated by a sodium salt solution which is supplied through a pipe *g*, and the flow of which is controlled by a valve *f*, said sodium salt solution being then passed through the nest of pipes *d* in the top of the casing and discharged downwardly onto the bed of zeolites, whereby said salt solution in passing through the bed of zeolites causes the bed of zeolites to become regenerated, that is to say, the sodium from the sodium salt solution is taken by the zeolites and calcium and magnesium given up by the zeolites.

The article then states that after the required time for the softening action, the brine or salt solution, including what sodium there is left and the calcium and magnesium, is drained from the casing through the valve *i*. It will be noted that the valve *i* is in a pipe connected to the *lowest point of the casing*. Accordingly means is provided connected to the *lowest point of the casing* for removing the salt solution so introduced.

The article also states the fact that after the salt solution is drawn off, the filter is to be washed out with water, which is done by upward rinsing action by the water passing through the raw water supply pipe *h*.

Not only does this article disclose the entire apparatus and material necessary for softening water, regenerating and rinsing the zeolites, but it states to those skilled in the art in the third paragraph:

> "The depth of the permutit layer is dependent upon the rate of flow of the water and its hardness and is determined by experience,"

indicating to those skilled in the art that if it is desired to soften water passing through the bed at a high rate, the depth of the bed is to be increased, and that likewise the size of the bed is to be controlled by the degree of hardness of the water.

It also refers to the area of the zeolite or permutit layer, and states that the same is dependent upon the required amount of purified water.

The article also states that a 15 per cent to 20 per cent salt solution should be used for regenerating. The article brings out the fact, in the third paragraph, that

> "the treated water may be reduced to 0° hardness or can be made to retain several degrees of hardness by regulating the flow through the filter."

Referring to claim 5 of the Gans patent, it will be seen that without any stretch of the imagination and without giving any forced interpretation to the disclosure of the Rundschau article, that said claim clearly reads upon the disclosure of said Rundschau article.

Certainly the Rundschau article discloses water softening apparatus comprising

a casing *a;*
a filter bed consisting of a layer of zeolites or alumino-silicates;
supporting means for said layer, the supporting

means being the coarse and fine gravel and the perforated plate *b*;
means (the pipe *h* and laterals *c*) for permitting the passage of water through the casing *a*;
means (the float control valve) for cutting off the supply of water on the exhaustion of the zeolites;
means (pipe *g* and valve *f*) for supplying and passing into the casing a sodium salt solution capable of regenerating zeolites; and
means (the lower small pipe and valve *i*) connected to the lowest point of the casing for removing the salt solution so introduced.

Nothing could be clearer than that claim 5 reads directly upon the disclosure of the Rundschau article, element for element, for performing the identical functions in identically the same way.

The claim, therefore, is squarely met and is invalid.

Plaintiff has taken the position that the Rundschau article does not disclose "means connected to the lowest point of the casing for removing the salt solution." Such position however is nothing short of an absurdity. The Rundschau article in the third paragraph clearly brings out the fact that the casing is drained through the valve *i*. A three-year old child knows what draining a bathtub is, and certainly one skilled in the art knows that if it was desirable to drain a casing of its liquid, it would be done by pulling or turning the plug at the lowest point of the casing. Plaintiff's expert Mr. Hammer was not quite certain that he knew how to drain a casing, but after some assistance from the trial Court, Mr. Hammer concluded that possibly a bathtub could be drained by pulling the plug.

The upturned portion of the raw water supply pipe *h* just after it enters the bottom of the casing *a*, is provided with openings through which hard water may also pass and through which the casing may be drained. But even though said openings were not shown, certainly

anyone skilled in the art would know enough to put drain openings in that pipe so that the casing could be completely drained through the small pipe and valve *i*.

Defendant will not take any more of your Honors' time discussing this trivial matter. It is perfectly evident that the Rundschau article does disclose everything set forth in claim 5, including "means connected to the lowest point of the casing for removing the salt solution so introduced."

Trial Judge Lindley in his opinion, after considering the various references, including the Rundschau article, and after reaching the conclusion that claim 1 was completely met by the various references and therefore invalid, with respect to claim 5 then stated (37 Fed. (2nd) 385, at page 392), (Trans., 569):

> "As to Claim 5, we have even a more weak assertion as to one element—means for removing the salt connected to the lowest point of the container. It was the addition of that element only that procured the allowance of the claim. Was this invention? Suppose we have before us an apparatus as claimed in claim 5 without this last element? What is the easy, natural, and obvious manner in which to drain the salt solution, which, following the course of gravitation goes to the bottom of the casing? A *school boy* would reply that the obvious manner is to put a plug and tap at the lowest point.
>
> A multiplicity of elements may be added indefinitely, without creating a patentable combination, unless by their collocation a new result is produced. The adding of a plug and connecting the same to a waste pipe, in order to drain off the solution of salt from Gans' container, was merely solving the problem of a *plumber*." (Emphasis ours.)

In discussing the Rundschau article, Judge Lindley in his opinion found all of the elements of claim 5 to be present in said Rundschau article. In this connection,

see his opinion, 37 Fed. (2nd) 385, at page 391 (Trans., 567), in which he states:

> "The reasons ordinarily urged against foreign teachings do not find the usual basis here, for the applicant resided in Germany; the publications were published there, some by himself, some by his associates, some by scientists like himself. It was in America that he applied for a patent, upon claims never submitted to his own government, to a Patent Office obviously without notice of these German publications. He assigned his application, and eventually it came to the plaintiff, some of the officers of which were associated with him in Germany. Yet we do not have his story of his experiences."

It is perfectly apparent therefore that claim 5 of the Gans patent is invalid, and that Judge Lindley is right in so holding.

The Seventh Circuit Court of Appeals sustained Judge Lindley in holding claims 1 and 5 invalid. See 43 Fed. (2nd) 898, 903.

Judge Evans said:

> "Claim 5. The validity of claim 5 can only be sustained (in view of our holding claim 1 invalid) on the theory that the last-named element 'means connected to the lowest point of the casing for removing the salt solution' introduced a novel element which evidenced something more than the skill of a mechanic. If there be novelty in this element it is traceable solely to the location of the means at the lowest point of the casing. To provide the means for an outlet at the bottom of the casing (to secure a perfect drain) can, we think, by no stretch of the imagination, be described as invention. It is hardly conceivable that one (a mechanic or an unskilled artisan) constructing an apparatus of the kind here under consideration would locate the opening to drain off the substance (liquid or solid), temporarily inserted, at any place other than at the bottom.
>
> Moreover, the prior art here, too, stands between Gans and a valid patent. The Technische Rundschau contains a drawing of an apparatus for water

softening through the use of zeolites and for regenerating the zeolites, which drawing located the means for removing the solution at the lowest point of the casing. One of the Bommarius filters had its outlet at the extreme bottom."

X.

RUNDSCHAU SOFTENER BUILT AND TESTED PROVES UPLOW IS SUPERIOR TO DOWNFLOW.

A water softener, Defendant's Exhibit No. 19, was built by defendant and operated in a laundry known as "Hawthorne Laundry Service," Hawthorne, New Jersey, for a period of months, taking in water of approximately seven grains hardness and producing soft water supplied to the laundry in a commercial and practical manner. The record clearly shows that the Rundschau softener was installed on April 8, 1929 (Trans., 135), and with the exception of a few days when piping connections to the washtubs and to the boiler were made and pumps installed in the lines, that the softener for six months was in continuous operation, and that on May 13th and 14th, the softener was connected to one of the washtubs in the laundry. (Trans., 135.) In the early part of June (Trans., 137), it was connected for supplying all of the water to the tubs and to the boiler, and that the softener operated at full water softening capacity and as good as any up-to-date zeolite type of water softener of any make whatsoever (Trans., 141), and even plaintiff's experts did not and could not adversely criticize the results obtained by this Rundschau device installed at the Hawthorne Laundry Service. The record shows the figures giving the date of regeneration, pounds of salt used, the flow of rate in gallons per minute, gallons of soft water produced between regenerations, gallons of water used

to wash out the salt, the soap test, and the efficiency of the zeolites or decalso used. The laundryman, Mr. Bachman, who was a witness, spoke in highest praise of the results produced by the softener, and particularly in connection with the removal of scale from the boiler tubes which he personally inspected at given periods. (Trans., 147, 148.)

This Rundschau device was tested on September 12, 1929, by defendant in the presence of plaintiff's patent counsel, patent experts, officers and employees, and not a single word of adverse criticism was made by the witnesses called as to the operative results and efficiency produced by this Rundschau water softener. As a matter of fact, Mr. Hammer (Trans., 171) in speaking about the operation of the Rundschau device said "it did very well." The only criticism which plaintiff made was through its patent expert Mr. Hammer, who tried to point out that the Rundschau water softener as built and tested by defendant was not in accordance with the disclosure of the Rundschau article. (Defendant's Exhibit No. 24; Trans., 461.)

Mr. Hammer stated that the article disclosed a locked bed and the tested softener did not have a locked bed; that the piping was different; that the zeolites were different; that the rate of flow of water was different; that the up rinsing rates were different; that the article called for a purified salt and defendant used salt that was not pure, and that the proportioning of the depth of the bed to flow was not followed. Then Mr. Hammer, in referring to a few immaterial details stated that the flange on the softener is not shown in the article and that neither is the gasket. He tried to make a point of substitution of one kind of cloth for another kind and that the cloth was beneath the plate rather than over the plate; that there was not enough excelsior; that there was not a uniform

layer of excelsior, and that the excelsior was not held down by anything. Mr. Hammer knows and anyone connected with the case knows that all these matters mentioned by Mr. Hammer are trivial and immaterial. Without going into great detail, in the last analysis, under cross-examination, Mr. Hammer admitted (Trans., 171) that outside of the question of a locked bed, not one of the alleged seven differences between the disclosure of the Rundschau article and the corresponding softener which defendant had produced as Defendant's Exhibit No. 19, affects the softening action of water by zeolites or regeneration of the zeolites. Accordingly, Mr. Hammer admits that all of the points of difference which he raised between the water softener disclosed by the Rundschau article and the water softener, Defendant's Exhibit No. 19, produced by defendant, are immaterial with the exception of the question of the locked bed. Mr. Hammer stated that the Rundschau device, Defendant's Exhibit No. 19, did not have a locked bed, whereas it was his contention that the Rundschau article, Defendant's Exhibit No. 24, describes a water softener with a locked bed.

Whether or not the Rundschau article describes a locked zeolite bed or the Rundschau softener, Defendant's Exhibit No. 19, has a locked bed, seems to be answered in different ways by plaintiff's experts, Mr. Hammer and Mr. Waterman. Mr. Waterman, under cross-examination, in discussing the relation of the height of the free space above the bed and the height or depth of the zeolite bed, said that if said free space is less than 10 per cent of the height of the zeolite bed, then the bed is locked. In this connection, see Trans., 83:

> "The Court: And if you have 10 per cent to 20 per cent, then you do not call it a locked bed?
>
> The Witness: No.
>
> The Court: With less than 10 per cent, you do call it a locked bed.

The Witness: I would not like your Honor to bind me down to that.

The Court: I am trying to get you two gentlemen at a definite point if I can.

The Witness: That is my estimate, of the minimum that would be effective, but I would not like to swear.

The Court: You have your opinion at this time that less than 10 per cent would not be effective in the washing process and that might therefore be termed locked bed.

The Witness: Yes."

Therefore, Mr. Waterman's definite position is that if the height of the free space above the bed is less than 10 per cent of the height of the zeolite bed, then the bed is locked.

The record shows and also according to Defendant's Exhibit No. 40, four inches of excelsior originally were placed over the zeolite bed. As a result of the excelsior becoming wet and compressed, the height of the excelsior under such conditions, according to Mr. Hammer, varied from an inch in certain places to two inches or a little more in other places. (Trans., 173.) Assuming an average of two inches for the height of the excelsior, there would then be left two inches of free space in some places between the top of the zeolite bed and the upper perforated plate.

Referring again to Defendant's Exhibit No. 40 (Trans., 499), it will be noted that the height of the zeolite bed is 27½ inches. On the basis of Mr. Waterman's allowance of 10 per cent, there could be free space to the extent of 2¾ inches and still have a locked bed. So, according to the definition of plaintiff's own patent expert, Mr. Waterman, the Rundschau device, Defendant's Exhibit No. 19, had a locked bed.

In any event, defendant in building the Rundschau de-

vice, Defendant's Exhibit No. 19, followed the teachings of the Rundschau article, Defendant's Exhibit No. 24.

Referring to Defendant's Exhibit No. 25 (Trans., 465) agreed translation of the Rundschau article, it will be noted in the second paragraph thereof that it shows that the permutit or zeolite "is covered with a loose uniform layer of fine excelsior."

Defendant's witness Dr. Moses, stated that the excelsior in a dry condition was packed in place loosely but firmly and that when it becomes soaked with water and is subjected to pressure, it compacts into one-half of the space or less than that. (Trans., 108.) Defendant followed the instructions of the Rundschau article, and if free space ultimately developed between the zeolite bed and the upper perforated plate, because of the soaking of the excelsior and the compacting thereof by pressure, it was because of natural conditions resulting in the regular operation of the device.

According to plaintiff's witness, Mr. Waterman, the tested Rundschau softener, Defendant's Exhibit No. 19 is a locked bed. According to plaintiff's witness, Mr. Hammer, said bed is free and unconfined.

It really makes no difference whether or not that condition may be called a locked bed condition or otherwise, both plaintiff and defendant agree that the device functioned very nicely, as Mr. Hammer said, or in an efficient, commercial and practical way, as defendant's witnesses stated. Accordingly, Mr. Hammer's contention that the Rundschau device, Defendant's Exhibit No. 19, did not have a locked bed, and in this respect differed from the disclosure of the Rundschau article, utterly fails. As Mr. Hammer testified that this was the only point of difference between the disclosure of the Rundschau article and the Rundschau device, Defendant's Exhibit No. 19, which had any effect in so far as the softening of water by zeo-

lites (Trans., 171) and the regeneration of the zeolites in said device is concerned, he must admit, in view of the Waterman definition, and accordingly plaintiff must admit, that the Rundschau zeolite water softener, Defendant's Exhibit No. 19, corresponds substantially to the disclosure of the Rundschau article, Defendant's Exhibit No. 24. Plaintiff's witness Mr. Hammer admitted that the Rundschau device, Defendant's Exhibit No. 19, functioned very nicely. The testimony shows that an exceptionally good record was made by the Rundschau device over a period of months in operation at the Hawthorne Laundry Service, thereby proving that the device of the Rundschau article is an efficient, successful commercial device for performing the intended functions. Such being the case, the Rundschau article cannot be successfully attacked as showing an inoperative device. It squarely meets and invalidates claim 5.

Plaintiff's witness Mr. Hammer presented a sheet of four sketches, Plaintiff's Exhibit No. I (Trans., 345), attempting to show that defendant in building the Rundschau device, Defendant's Exhibit No. 19, did not follow the disclosure of the Rundschau article. However, upon cross-examination, it was clearly brought out that there is nothing in the Rundschau article to indicate that the cover over the excelsior had to be a follower plate or a plate loosely mounted in the casing so that it at all times would press down upon the excelsior. (Trans., 167.)

The plate in the Rundschau softener, Defendant's Exhibit No. 19, answers completely the requirements of the Rundschau article, and is a result of the efforts of one skilled in the art to follow slavishly the teachings of said Rundschau article.

In discussing the Rundschau device which defendant built, Trial Judge Lindley found that the water softener

of the Rundschau article which defendant built was in substantial accordance with the disclosure of the Rundschau article. In this connection, see Judge Lindley's opinion (37 Fed. (2nd) 385 at 391), (Trans., 565):

> "Defendant built a softener in accordance with its understanding of this article, and operated the same at the Hawthorne Laundry. Plaintiff's experts admitted that the operation was successful; the only dispute being as to whether or not, in the structure made by defendant, the bed of excelsior was located and confined in the same manner as indicated in the Rundschau article. After considering all of the evidence, the court is of the opinion that the construction in question was in substantial accordance with the disclosure of the Rundschau article."

It probably will be argued in behalf of plaintiff that the free and unconfined space should be read into claim 5 to save it, in so far as the Rundschau article is concerned, but on Mr. Hammer's theory, the Rundschau article does disclose a free and unconfined bed because the zeolites are covered with a loose layer of excelsior. In any event, as will be pointed out more in detail later on, there is no basis in the specification for the injection of such limitation in the claim. In addition, however, it is perfectly certain that if the Rundschau device were a later device, plaintiff would contend that claim 5 is clearly infringed, because claim 5 does not call for a free and unconfined bed of zeolites. If then, as plaintiff would argue under such circumstances, the Rundschau device would be an infringement, it necessarily follows that in view of the fact that the Rundschau article is earlier, it anticipates. As so aptly stated in *Kil-Nock Company* v. *Chicago Plating Co., et al.*, 10 Fed. (2nd) 536:

> "Another well-known rule, applying here with peculiar force, is that 'the proper test of the validity of a patent is in the application of the rule that what would infringe, if later, is anticipation, if earlier.'

Knapp v. *Morss* (1893) 14 S. Ct. 81, 150 U. S. 221, 37 L. Ed. 1059; *Peters* v. *Active Manufacturing Co.* (C. C. 1884) 21 Fed. 319."

Paraphrasing statements made by this court in *American Fruit Growers, Inc.* v. *Brogdex Company*, 51 S. Ct. 328 and *Sewell* v. *Jones*, 91 U. S. 171, 182, Gans patent "lacks novelty." "The substance of its discolsures had been revealed by" the Rundschau article of January 27, 1909, more than two years before Gans filed his application.

XI.

CLAIM 1 IS INVALID.

Claim 1 of the Gans patent in suit is clearly invalid in view of any one of the following references:

Gans Article of April 15, 1909,
Feldhoff Article of September 7, 1907,
Rundschau Article of January 27, 1909,
Gebrauchsmuster No. 341,512,
Gebrauchsmuster No. 313,671,
Leister patent No. 211,064,
Weiss Thesis, published June, 1910.

XII.

GANS ARTICLE OF APRIL 15, 1909, IS A COMPLETE ANTICIPATION OF CLAIM 1. PLAINTIFF'S PATENT EXPERT, MR. WATERMAN, STATED THAT IN ANY PLACE WHERE GANS MENTIONED "BACK-WASHING" HE MEANT THE ZEOLITE BED IS "FREE AND UNCONFINED." HE, THEREFORE, ADMITTED THAT THIS GANS ARTICLE COMPLETELY INVALIDATES CLAIM 1 EVEN WITH THE UNWARRANTED AND BASELESS INJECTION INTO SAID CLAIM MADE BY THE SECOND AND SIXTH CIRCUIT COURTS OF APPEALS.

This Gans article, Defendant's Exhibit 47 (Trans., 515 at 517, translation in part 351), was never before the

other courts in the significant manner in which it appears here. In effect, it becomes an entirely new reference because plaintiff's witness, Mr. Waterman now says that when Gans speaks of back-washing, Gans means the zeolite bed is free and unconfined.

Attention is directed to the twelve translations, Defendant's Exhibit No. 44 of said Gans article, and particularly to Dr. Mason's translation. This article, under the heading "In the Technic for Water-Purification," brings out the fact that the permutits or zeolites are particularly appropriate for softening water and removing manganese or iron from water.

Then under the heading "A. Softening" Gans states:

> "The process, which is in question for this purpose, is in its most simple form a pure exchange process by which the calcium and magnesium of the water are taken up by the zeolite and the sodium is given off to the water."

Gans therefore makes clear the softening action of zeolities. In the following paragraph he refers first to regeneration of the exhausted zeolites, wherein he states:

> "The regeneration is performed by washing off the zeolites, which have been saturated with calcium or magnesium, with a common salt solution, by which means a sodium zeolite is again produced which is again able to soften new quantities of water."

Gans makes it clear, therefore, how the zeolites are regenerated.

Then, in the next sentence, Gans speaks of the use of such water softeners. He says:

> "There are already several filters of this sort in use, some to prepare soft water for boiler feed purposes and others for laundries. The filter plants mentioned are remarkable through the simplicity of their arrangement."

Then he goes on to say,—"The softening is complete with cold water." This shows that even with cold water, zero degrees hardness was being produced.

Then, in the next paragraph, Gans starts to describe the water softener construction. He states—

> "The apparatus consists of an iron or wooden filter, the height of the permutit bed is determined by the hardness of the specific water and the rapidity of filtration. The useful effect is greater the more slowly the water flows through the permutit filter and finer the grain the permutit uses.
>
> The permutit bed lies upon fine sand, which becomes coarser at the bottom. At the top it is best closed off by a sand filter placed about one-third to one-half meter above the surface of the permutit layer. The sand filter under many conditions can be replaced by a limestone filter, for instance, when treating water containing iron and acids. This arrangement of the upper sand or limestone filter will also prevent that by back-washings, the specifically lighter permutits are not mechanically washed away."

This description is a perfect description of the device of the Gans patent in suit and is a complete disclosure of everything set forth in claim 1 of the Gans patent.

Certainly this Gans article of April 15, 1909, discloses a water softening apparatus comprising a casing. It discloses a filter bed consisting of a layer of sand or quartz and a layer of zeolites or hydrated alumino-silicates disposed on the layer of sand or quartz. It discloses means for permitting the passage of water through the casing, and means for cutting off the supply of water on the exhaustion of the zeolites, for it clearly brings out the fact that the height of the permutit bed is determined by the hardness of the specific water and the rapidity of filtration, and that the useful effect is greater the more slowly the water flows through the permutit filter;

showing that a supply of hard water is contemplated and the control of the flow of said supply is contemplated.

The last element of the claim is—

> "means for passing through the casing a solution of salt capable of regenerating the zeolites."

Certainly this article discloses the fact that there must be such means, for the article clearly states that—

> "The regeneration is performed by washing off the zeolites which have been saturated with calcium or magnesium, with a common salt solution, by which means a sodium zeolite is again produced which is again able to soften new quantities of water."

It is perfectly evident from this article that Gans is describing a down-flow type of water softener, for he refers to back-washing the bed of zeolites, and in this connection states:

> "This arrangement of the upper sand or limestone filter will also prevent that by back-washing, the specifically lighter permutits are not mechanically washed away."

This Gans article of April 15, 1909, therefore completely anticipates everything that is disclosed in the Gans patent in suit and particularly as defined in claim 1 thereof.

In this connection, Judge Lindley made the definite finding that said Gans article of April 15, 1909, discloses every element set forth in claim 1 of the Gans patent in suit. See 37 Fed. (2nd) 385, at 388 (Trans., 560):

> "* * * The conclusion is unavoidable that Gans in April, 1909, intended to describe, and did describe, a filter with the essential elements of his later application and one containing the now alleged implied essential element of a free and unconfined space above the zeolites. He disclosed a water softener apparatus composed of a casing, a filter bed of sand, a layer of zeolites disposed thereon, means for permitting the passage of water through the casing,

means of cutting off the supply of water on the exhaustion of zeolites, the suggestion of regeneration to be accomplished by washing off the zeolites with a salt solution and of back-washing for rinsing."

Plaintiff, in its brief for the Seventh Circuit Court of Appeals at page 23 says in a heading—

"Zero Water (Soft Water) was Commercially Unknown until the Patented Apparatus was Introduced."

Plaintiff makes the same misrepresentation at page 40 of its same brief, and at page 14 of the present brief wherein it will be apparent how the Second Circuit Court of Appeals was mislead and in error.

Gans, himself, states the contrary in his April 15, 1909, article and all of the translators agree on this part of the translation. Gans says in part (Trans., 450):

" * * * *Various filters of this kind are already in use,* partly for the production of *soft water for boiler supply* purposes, partly *for laundries.*

The filter plants in question are notable for the simplicity of their arrangement.

The *softening is complete* even in the case of cold water."

Nothing further need be said on that misrepresentation.

On a different paragraph of the Gans article, there are seven translations submitted in behalf of plaintiff, in an effort to show that the upper sand filter rests immediately upon the zeolite bed; or, in other words, that the zeolite bed is a locked bed, as distinguished from a bed in which there is free and unconfined space above the bed, which results when the upper sand filter is spaced upwardly from the upper surface of the zeolite bed.

Of course, claim 1 does not say a single word about the zeolite bed being free and unconfined, but the Second and Sixth Circuit Courts of Appeals admittedly read

that limitation into claims 1 and 5 in order to sustain said claims. Those courts at that time apparently assumed, if they considered the Gans article at all, that plaintiff's translations were correct, but there is *new evidence* in this trial showing conclusively that the Gans article clearly describes a zeolite bed which is free and unconfined. In this connection let us refer to the testimony of plaintiff's patent expert, Mr. Waterman. He admitted that there was no statement in the Gans specification that the zeolite bed of the patent is free and unconfined. (Trans., 70.) (Original Rec. 178.)

"Q. Will you please answer my question? I asked you where in the specification of the Gans patent in suit there is a statement about a free and unconfined zeolite bed. Point it out; that is what I want.

A. That language is not used, so far as I know, anywhere in the specification.

Q. And its equivalent is not used, is it?

A. Why, I think it is.

Q. Point that out.

A. Well, you have read it in part, where it describes the back-washing."

Then, in the original record, page 179, (Trans., 70):

"Q. I said where Gans mentioned any place back-washing, your same definition obtained that is—that the bed of zeolites is free and unconfined; is that correct?

A. I think so."

Mr. Waterman's position, therefore, is that although Gans in his patent does not mention a zeolite bed that is free and unconfined, Gans, nevertheless, when he refers to back-washing, means that the bed is free and unconfined.

Then, by the same token, if back-washing in the Gans patent means that the zeolite bed is free and unconfined, Gans in his article of April 15, 1909, when he refers to back-washing, means there is a zeolite bed which is free

and unconfined. If Your Honors will refer again to the disputed paragraph of said Gans article, you will note that all of the translators agree that Gans states:

> "This arrangement of the upper sand or limestone filter will also prevent that by back-washing the specifically lighter permutits are not mechanically washed away."

Therefore, if the courts read the free and unconfined bed into claims 1 and 5 of the Gans patent, then by the same token, the public, by the interpretation which plaintiff's expert has given to the Gans specification and likewise to the Gans article, must be given the same right of interpretation of said Gans article.

Plaintiff's witness, Mr. Kriegsheim, testified (Trans., 184) that Gans disclosed to him the idea of the zeolite water softener with a "free and unconfined bed" in the middle of 1908. Such being the case, Mr. Gans a year later, when he published his article of April 15, 1909, was describing what he considered to be a successful operative zeolite water softener with a "free and unconfined bed" as distinguished from a locked bed which Gans is now credited as believing was an inoperative softener.

It is also significant that Gans in the last paragraph of his article of April 15, 1909, refers to exactly the same installation referred to in the earlier Technische Rundschau article of January 27, 1909. Gans in this article is talking about successful devices and their simplicity and their production of zero hardness water and proper regeneration of zeolites and back-washing and everything that is mentioned or can be inferred from the Gans patent in suit.

This Gans article of April 15, 1909, with its new significance in this suit is a complete anticipation of any invention Gans alleges to have made and defined in claims 1 and 5 of his patent.

XIII.

JUDGE LINDLEY'S FINDINGS AND REMARKS ON GANS ARTICLE OF APRIL 15, 1909. HE HELD THAT THIS PUBLICATION COMPLETELY DESCRIBES THE ALLEGED INVENTION AND INVALIDATES THE CLAIMS. THE SEVENTH CIRCUIT COURT OF APPEALS AFFIRMED JUDGE LINDLEY'S DECISION.

Judge Lindley, after making a careful study of the Gans article and of the testimony in connection therewith, reached the inevitable conclusion that the alleged Gans invention as disclosed by his patent in suit, was completely anticipated by the Gans article. So clear and accurate are Judge Lindley's statements that his opinion on the Gans article is quoted in full as follows (see 37 Fed. (2nd) 385, beginning at 387), (Trans., 558):

> "The Gans article was published on April 15, 1909, under the heading 'The Technique of Water Purification.' He therein stated: 'The process is in its most simple form a pure exchange process by which the calcium and magnesium of the water are taken up by the zeolite and the sodium is given off to the water. * * * The regeneration is performed by washing off the zeolites, which have been saturated with calcium or magnesium, with a common salt solution, by which means a sodium zeolite is again produced which is again able to soften new quantities of water. * * * There are already several filters of this sort in use, some to prepare soft water for boiler feed purposes and others for laundries. The filter plants are remarkable through the simplicity of their arrangement. * * * The softening is complete with cold water. * * * The apparatus consists of an iron or wooden filter. The height of the permutit (zeolite) bed is determined by the hardness of the specific water and the rapidity of filtration. The useful effect is greater the more slowly the water flows through the permutit filter and the finer the grain thereof. The permutit

bed lies upon fine sand, which becomes coarser at the bottom.' The proper translation of the next sentence is in dispute. Defendant's translators read it as follows: 'At the top it is best closed off by a sand filter placed about one-third to one-half meter above the surface of the permutit layer.' The remainder of the paragraph is not in dispute, and is as follows: 'The sand filter under many conditions can be replaced by a limestone filter, for instance, when treating water containing iron and acids. This arrangement of the upper sand or limestone filter will also prevent that by back-washings, the specifically lighter permutits are not mechanically washed away.'

If the defendant's translation be accepted, it would appear that Gans in 1909, more than two years before the filing of his patent, published to the world a description of a water softener containing every claimed essential element of claim 1. Plaintiff insists that the proper translation of the disputed sentence above mentioned is in substance as follows: 'At the top it is best finished off by a sand filter which, with a thickness of about one-third to one-half meter is arranged over the surface of a permutit layer,' and contends that this language indicates that, when Gans wrote the article in 1909, he was not describing the apparatus which he later patented, but one in which there was not a free space above the body of zeolites.

Appreciating that the proper translation is a question of fact, I am of the opinion, after a careful perusal of all of the direct and cross-examination of the translators, that defendant's translation is more nearly consistent with the original meaning of the German words used than that of the plaintiff. The cross-examination of the translators who testified for plaintiff weakens the force of their direct testimony. I am of the opinion that at that time, in 1909, Gans was describing a body of zeolites which was free and unconfined.

In this connection the testimony of the president of the plaintiff brings to light some interesting facts. He was an associate of Gans in Germany, and observed certain apparatus for softening water in

which there was directly above the body of zeolites not an entirely open space, but one occupied by excelsior held in contact, according to his testimony, with the zeolites by a floating weight. He testified as to the results of his observation, and said that subsequent to said time Gans showed to him and tested in his presence a different arrangement in which the excelsior was omitted and replaced by a free space above the zeolites; that this excelsior was removed from the second apparatus and the free space substituted therefor in the latter part of 1907 or the early part of 1908; that at that time Gans discarded the excelsior and designed his device with an open space above the zeolites; that about the middle of 1909 the witness built filters according to Gans' later design, and that thereafter he built only devices with free spaces above the zeolites. Thus the plaintiff has furnished testimony to the effect that in the latter part of 1907 or the early part of 1908 Gans became convinced by the demonstrated operation of the device that the excelsior should be removed and a free space substituted therefor, and then eliminated the excelsior and supplanted the same with a free space. With this realization in his mind, the existence of which is proved by plaintiff, it is unreasonable to believe that he would, a year after he made his alleged discovery of the necessity of free space, describe in his published article as a satisfactory filter one which did not have the free space, the alleged deficiency of which plaintiff now proves Gans discovered as early as the latter part of 1907 or the early part of 1908.

Gans, the only witness who could have thrown more light upon this subject, residing in Germany, was not brought to this country as a witness, nor was his deposition taken. There is certainly no presumption that, if produced by the plaintiff, he would have testified to anything in contradiction to his former associate, or that he did not intend to describe an unconfined bed of zeolites in his publication. The conclusion is unavoidable that Gans in April, 1909, intended to describe, and did describe, a filter with the essential elements of his later application and one containing the now alleged implied essential ele-

ment of a free and unconfined space above the zeolites. He disclosed a water softener apparatus composed of a casing, a filter bed of sand, a layer of zeolites disposed thereon, means for permitting the passage of water through the casing, means of cutting off the supply of water on the exhaustion of zeolites, the suggestion of regeneration to be accomplished by washing off the zeolites with a salt solution and of back-washing for rinsing.

Gans said that the arrangement he suggested would prevent the light zeolites from being washed away by 'backwashings'. This was information to the public that backwashing for the purpose of washing off the salt solution was essential; that he did not futher discuss it undoubtedly was due to the fact that such treatment is obviously necessary in order to rid the zeolites and the filter casing of an excess of salt before the water becomes palatable.

This is of importance. Plaintiff now insists that claim 1 comprises as one essential element a free and unconfined bed of zeolites, and supports the assertion by the testimony of its expert, who, after admitting that in neither the claims nor description of Gans' patent is there any statement about a free and unconfined zeolite bed, said that Gans must have contemplated a free and open bed because in the description he speaks of 'backwashing', and that the conclusion that it is essential that the bed of zeolites be free is implied from Gans' use of the word 'backwashing', for the reason, as the witness claims, that there cannot be proper backwashing of a locked bed. In his article Gans uses the word backwashing obviously with the same meaning, and, if it is necessarily a conclusion that the word 'backwashing' in the patent presupposes a free bed of zeolites, then it is equally true that the use of the word backwashing in the article presupposes the same kind of a bed. Thus, on the theory of plaintiff's expert, it is evident that Gans in 1909 was describing a filter with a free bed of zeolites, thus corroborating the testimony of plaintiff that as early as the latter part of 1907, or the early part of 1908, Gans had realized that excelsior would not do, and was building before 1909 an apparatus which had a free bed."

In this same connection, Judge Evans speaking for the Seventh Circuit Court of Appeals at 43 Fed. (2nd) 898 at 901, said:

> "Moreover, there is another reason why this claim is invalid.
>
> If we read into this claim this limitation, and assume that the Gans patent called for an *unconfined* bed of zeolites, a study of the prior art leads us to the same conclusion. In short, there was no novelty in the unconfinable character of the bed of zeolites.
>
> This prior art, a study of which is necessary to ascertain whether novelty resided in the unconfinable character of the zeolites, is supplied largely by German chemists. Foremost among them is Gans. Much of the prior publications came from his pen. Some appear in his patents. Other articles are written by his associate.
>
> Some dispute has arisen over the translation of a Gans article written in the German language. In a study of the various translations and in the differences that arise over them it is significant that Gans himself did not testify or explain or attempt to explain what appellee asserts was fatal to his right to a patent in the United States. He also failed to explain why he did not apply for a patent in Germany on the apparatus here under consideration. Gans was evidently an inventor who knew the value of patents, and the record shows he secured several of them in the United States. His failure to secure one in Germany suggests, at least, that he was perhaps embarrassed by this prior art."

XIV.

FELDHOFF ARTICLE OF SEPTEMBER 7, 1907, COMPLETELY ANTICIPATES CLAIM 1 AND GANS DISCLAIMED IN VIEW THEREOF.

The Feldhoff Article of September 7, 1907, Defendant's Exhibit No. 32 (Trans., 477, 479), is a complete anticipation of claim 1, particularly in view of the facts developed during this trial.

It will be remembered that it was because of the discovery of this Feldhoff Article during the pendency of the suit of *The Permutit Company* v. *Wadham, et al.*, that the plaintiff filed its disclaimer with respect to claim 1, limiting claim 1 of the Gans patent to a downflow softener. (See Defendant's Ex. No. 42; Trans., 507.)

As will be pointed out more in detail later, the record clearly establishes, not only by defendant's witnesses but also by plaintiff's witnesses, that the upflow type of zeolite water softener is superior to the downflow type of zeolite water softener. Defendant takes the position that the plaintiff in disclaiming upflow with respect to claim 1 disclaimed the inferior structure and operation, and in view of the fact that the upflow type of water softener has been proven to be superior, claim 1 must of necessity be invalid, for certainly there would be no invention in providing a downflow zeolite water softener arrangement when it was old in the art to have an upflow zeolite water softener arrangement such as disclosed, for example, in the Feldhoff Article.

Plaintiff's witness, Mr. Waterman, admitted (Trans., 73) that there is no real difference in function in a downflow and upflow softener except as to "channeling" and while he said such was in favor of the downflow softener (Trans., 73), it was proven through him (Trans., 66) on the "backwashing" testimony that it was in favor of the upflow softener. Therefore, if there is any invention it is in favor of upflow rather than downflow.

In the earlier case of *The Permutit Company* v. *Paige & Jones Chemical Company, Inc.* (R. 94, 95), Mr. Hammer, plaintiff's witness, stated (Trans., 73):

> "Once Gans had shown that the way to make a successful zeolite softener was to leave the bed free and unconfined, the arrangement of the pipes so that the water would run one way or another is nothing but a plumber's job."

Defendant agrees with the last part of that statement, that in the arrangement of the pipes so that the water would run downwardly through the zeolite bed instead of upwardly through the zeolite bed is nothing but a plumber's job. Certainly that is all it amounts to. Clearly it would not rise to the dignity of invention. Therefore, by plaintiff's own admission where it is old to provide the combination of claim 1 and have the water run upwardly through the zeolite bed, certainly there would be no invention left in claim 1, particularly in view of the fact that it has been proven that the upflow zeolite water softener is superior to the downflow.

While the question of disclaimer is being considered, your Honors' attention is directed to the Gans file wrapper, Defendant's Exhibit No. 65, and particularly to the disclaimer found on page 58 thereof, and more particularly to the last four lines of paragraph 1 of said disclaimer, wherein the following is stated:

> "that it has reason to believe, that, through inadvertence, accident or mistake, the specification and first claim of said patent are too broad, including that which said Robert Gans was not entitled to claim in said patent."

It is submitted that the disclaimer as a matter of fact goes to the entire patent because Gans in his disclaimer admits that the specification as well as the first claim included "that which said Robert Gans was not entitled to claim in said patent." In other words, the disclaimer goes to the body of the invention, and Gans so recognized the fact when he referred to the specification as being too broad in the same particular in which claim 1 is too broad. Of course, it became apparent during the trial that Gans as a matter of fact did not invent anything. Gans knows that he did not invent anything covered by his patent in suit, and the plaintiff knows it,

and that is one of the reasons why Gans has never been brought to this country to testify in any of the many suits which plaintiff has brought for alleged infringement of the Gans' patent in suit. Plaintiff had others from Germany come over to testify in *Permutit* v. *Wadham, et al.*

Referring more specifically now to the Feldhoff article, Defendant's Exhibit No. 32 (Trans., 477, 479), a drawing is shown disclosing an upflow water softener, which Feldhoff describes in his article. As brought out in said Feldhoff article, Feldhoff actually performed an experiment with a smaller water softener at a meeting of technical men. Referring to the agreed translation, Defendant's Exhibit No. 33 (Trans., 479), of said Feldhoff article, Feldhoff describes the performance of the experiment. Among other things he states:

> "I will now perform before you some exchange base experiments with permutite, and will commence with a calcium removal or deliming of water. In the filter here I have sodium permutite. I pour over it local water that I estimate at about 10 German hardness degrees—analysis I was not able to make. You see, the water is, after filtration, entirely free from lime. Through this little filter that contains about 1 kilogram of permutite I could smoothly delime about 1 cubic meter of water of about 10 German hardness degrees and without the smallest technical difficulty."

Feldhoff makes it clear therefore that complete softening of water is accomplished. He emphasizes this point in the next paragraph, Defendant's Exhibit No. 33, in which he states:

> "By the use of permutites, it is now made possible to produce water in sufficient quantities that is entirely free from lime and at inconsiderable cost as I shall show later in the expense sheet calculation."

Then at this point Feldhoff refers to the drawing

shown in the Feldhoff article, Defendant's Exhibit No. 32, and states:

> "Here is a filter that is capable of completely deliming about 40 cubic meters of water of 10 German degrees hardness in ten hours."

In describing the apparatus referred to in the drawing, and bearing in mind that he was talking to a group of technical men, Feldhoff went on to say:

> "The water to be purified is lead in from below, passes through a layer of gravel, provided for the protection of the permutites from mechanical impurities, forces itself through the permutite layer and leaves the filter fully de-limed by the outlet funnel *d*. When the filter is exhausted, one passes a hot fifteen per cent solution of sodium chloride through it and the proportion of about one-half kilogram salt to every cubic meter of the water filtered and moreover via the same path as the water, by turning the two-way valve. In circulating the salt solution—the step of regeneration,—a lower circulation speed is chosen about one-fifth to one-sixth of the original rate of flow. Thereafter follows washing out with a strong stream of water until all the salt has been removed, when the filter is again ready for use."

Therefore, Feldhoff in his article also clearly discloses the regeneration of the zeolites and the washing thereof.

Then he goes on to state that:

> "The firm of J. D. Riedel erected such a filter in one of its plants; as a result of the experiments thereon gained the following data as to the profitableness which has been obtained."

Then Feldhoff goes on to tell about the commercial success of this upflow water softener.

Referring to the drawing disclosed in the Feldhoff article, Defendant's Exhibit No. 32 (Trans., 477), and bearing in mind claim 1 of the Gans patent in suit, it is clear that said Feldhoff drawing and description disclose

every single element of the combination. They disclose a water softening apparatus comprising a casing. They disclose a filter bed consisting of a layer *b* of sand or quartz, and a layer *a* of zeolites or hydrated aluminosilicates disposed on the layer *b* of sand or quartz. They disclose means comprising the upwardly extending pipe entering into the lowest point of the casing for permitting the passage of water through the casing. They disclose means, a valve *f*, for cutting off the supply of water on the exhaustion of the zeolites, and they disclose means, the brine tank *c* and pipe connection to the lowest point of the casing, for passing through the casing a solution of salt capable of regenerating the zeolites.

The water to be softened passes upwardly through the zeolites. The regenerating salt solution passes upwardly through the zeolites and the rinse water passes upwardly through the zeolites, all of said fluids passing outwardly through the funnel *d* and into the soft water service line or to the waste pipe, dependent upon the position of the upper valve *f*.

This Feldhoff article is a complete disclosure and an anticipation of everything set forth in claim 1 of the patent. No wonder plaintiff disclaimed "upflow" in the combination of claim 1. No wonder Judge Tuttle held claim 1, as well as claim 5, invalid. The only mystifying thing about it is that the Court of Appeals for the Sixth Circuit sustained said claims. It did so, as pointed out above, by reading into said claims the free and unconfined bed feature, which has no basis even in the specification.

Undoubtedly the Sixth Circuit Court of Appeals was influenced in reaching this conclusion by the thought that an upflow water softener was inoperative and would not work; see for example *The Permutit Company* v. *Wad-*

ham, et al., 13 Fed. (2nd) 454, at 456, in which Judge Denison, speaking for the Court, said:

> "None of the experts seem to know that even a little salt water remaining would interfere with the efficiency of the process, so, too, the necessity of the downward flow and of the free top to the bed are not taught by the old art of filtering."

Then again, near the end of page 456, Judge Denison states:

> "One point now stressed is in regard to plaintiff's disclaimer. Under the language of the claim as issued, the flow of water through the zeolites might have been either upward or downward. Early in the litigation a German publication was produced which was claimed to disclose the same process, but which showed the water passing upwardly. The drawings and description in the patent in suit showed that the water flowed downwardly, and Gans became convinced, even if he did not at first appreciate, that the downward flow, as distinguished from the upflow, was practically essential to a commercially successful process. He therefore disclaimed so much of the patent as might reach a process employing the downward flow, and thereby, in effect, amended and limited his claim to a device employing the downward flow."

Then again, Judge Denison stated at page 457:

> "Nor does it follow that in this particular environment there is no patenable distinction between the downflow and the upflow. The former works satisfactorily, and it seems probable, if not certain, that the latter would not. The reason why one will and the other will not shows that this difference is one of those which are not so simple as they seem."

It is impossible to understand how the Court of Appeals for the Sixth Circuit reached the conclusion that the upflow water softener could not work. Possibly it was defendant's fault in that case for not making its record clearer that the upflow softener, not only would work successfully on a commercial basis, but as a matter of

fact that the upflow water softener is far superior to the downflow water softener. Had these facts been brought out in that record, the Sixth Circuit Court of Appeals inevitably could not have stated the position which it has stated in its opinion.

Judge Lindley thoroughly agrees with respondent in its conclusions in this connection. See Judge Lindley's opinion (37 Fed. 2nd 385, at 389), (Trans., 561), in which the following is to be noted:

> "* * * Later the Court of Appeals in *Permutit Co.* v. *Wadham*, 13 F. (2d) 454, 457, in holding that claim 1 was valid, said: 'Nor does it follow that * * * there is no patentable distinction between the downflow and the upflow. The former works satisfactorily, and it seems probable, if not certain, that the latter would not. The reasons why one will and other will not show that this difference is one of those which are not so simple as they seem.' Obviously the court was of the opinion, drawn from the evidence before it, that the upward flow softener would not work, and that therefore the reference to an upward flow softener was not pertinent. The evidence in the instant case is conclusive to the effect that upward flow softeners are in fact of greater utility and efficiency than downward flow softeners."

The Seventh Circuit Court of Appeals, in affirming said through Judge Evans, 43 Fed. (2nd) 898 at 900:

> "In the instant suit the advantages or disadvantages of an apparatus calling for a downflow of water through the zeolites were sharply contested. The District Judge found, contrary to the observations of the court in the last cited case: 'The evidence in the instant case is conclusive to the effect that upward flow softeners are in fact of greater utility and efficiency than downward flow softeners.'
>
> An examination of the evidence not only sustains the finding of the District Court, but persuasively supports it. In view of the object to be accomplished, it would seem difficult, if not impossible, to say there was either merit or novelty in providing means

which called for the downflow rather than the upflow of water through the bed of zeolites. The finding of the District Court, however, conclusively eliminates this asserted novelty (b) which resides in an apparatus which provides for the *downflow* of the water through the zeolites.

Confronted with a problem of providing means for the introduction of water into a casing at the bottom of which was a layer of gravel upon which rested a layer of zeolites, and through which the water was to pass, the mechanics had the choice of running the water upward or downward. As no new results attended the flowing of the water either way, it merely called for the exercise of discretion on the part of the mechanic to place the opening either at the top or at the bottom of the casing."

It is perfectly apparent that not only is claim 1 invalid in view of the Feldhoff article, but that if this case were before the Court of Appeals for the Sixth District with the record which is before this court, the Sixth Circuit Court of Appeals would inevitably hold that claim 1 is clearly invalid.

The Feldhoff article in effect therefore becomes an entirely new reference because of the testimony which has been taken in this case and because the fact has been established that the upflow water softener not only operates successfully on a commercial basis but it is superior to the downflow softener.

Claim 1 is absolutely invalid in view of the Feldhoff article of September 7, 1907.

Plaintiff has argued that the device of the Feldhoff article is inoperative because the zeolite bed is not free and unconfined, but such argument cannot be taken seriously, particularly in view of the fact that plaintiff entered its disclaimer. If plaintiff were sound in its position that the softener of the Feldhoff article is inoperative, it never would have entered the disclaimer.

In view thereof, it is contended that for all practical purposes, plaintiff is estopped from now alleging that the softener of the Feldhoff article is inoperative because it does not have a free and unconfined bed.

XV.

PLAINTIFF SUED WADHAM ET AL. IN THE SIXTH CIRCUIT FOR INFRINGEMENT OF THE DUGGAN PATENT 1,276,629, THEREBY POSITIVELY ASSERTING THAT ITS LOCKED ZEOLITE BED IS COMMERCIALLY OPERABLE FOR BOTH UPFLOW AND DOWNFLOW SOFTENERS AND THAT THE UPFLOW IS SUPERIOR IN OPERATION. PLAINTIFF, THEREFORE, IS NOW ESTOPPED FROM ASSERTING CONTRA POSITION.

Furthermore, plaintiff is estopped from alleging that a locked zeolite bed is inoperative because of the Duggan Patent No. 1,276,629, August 20, 1918 (Defendant's Exhibit No. 49; Trans., 638), which was granted to the plaintiff. As Judge Lindley during the trial said (Trans., 111):

> "If before the patent is granted they accept an assignment of it and adopt it as their act, before the patent is issued, they are a party to the granting of the Letters Patent."

Precisely so, and this patent is a complete disclosure of the fact that a locked zeolite bed, both in an upflow softener as shown in Figure 1 of the patent, and a locked zeolite bed in a downflow softener as shown in Figure 2, are perfectly operative.

On page 2, beginning in line 77, Duggan says:

> "In Fig. 1 casing *B* contains a layer or bed *1* of exchange silicates. As shown, this layer is kept in position by an upper perforated cross-plate *2* and a lower perforated cross-plate *3*, although the use of these plates is not necessary."

On page 1, beginning in line 53, Duggan states:

> "The channeling difficulties are more accentuated where the flow of water to be softened is down through the bed than where the flow is upward."

Then on page 1, after discussing difficulties in downflow, in the paragraph beginning in line 64, Duggan in line 77, page 1, states:

> "An upward passage of water in the softening phase of the apparatus avoids in large measure these difficulties, giving a greater period of activity since the buoying action of the current keeps the granules apart and prevents packing and channeling, * * *"

Then in line 97, page 1, Duggan states:

> "Whatever be the direction of flow of water in the softening phase, however, I find certain advantages are gained by an upward flow of salt solution in the regenerating phase. With the relatively heavy salt solution passing in an upward direction, the relative movement of the granules with regard to each other is more pronounced than it is with a similar flow of water; and uniform passage of the salt solution takes place."

Duggan, on page 3, beginning in line 111, states:

> "With an upward passage of both liquids as shown in Fig. 1, the advantages of a buoying action during softening as well as during regeneration, are secured; while in the case of Fig. 2, the advantage described due to the entry of the two liquids at opposite faces of the mass of exchange silicate is secured together with a buoying action during regeneration only."

Therefore, Duggan and his assignee, the plaintiff, clearly assert the operativeness of a zeolite water softener with a locked bed, whether the softening flow is in an upward direction or a downward direction.

Not only did the plaintiff definitely take this position by accepting an assignment of the Duggan application before the patent was granted, but it definitely took that

position in an affirmative way after the grant of the patent, for, as your Honors will note in referring to the suit of this plaintiff against *Wadham, et al.*, in the Sixth Circuit, this plaintiff originally brought the suit against the defendant in that case not only upon the Gans patent here in suit but also on this very Duggan Patent No. 1,276,629. Then when plaintiff realized that it was taking inconsistent positions in insisting that a free and unconfined bed was necessary to sustain the Gans patent in suit, and this Duggan patent took the diametrically opposite view, the plaintiff, as gracefully as possible, withdrew the Duggan patent from that suit. Plaintiff otherwise never would have withdrawn the Duggan patent from that suit. Plaintiff found that it was blowing hot and cold at the same time, and by force of circumstances was caused to maneuver with as little damage to itself as possible, but the fact stands out boldly and unmistakably that this plaintiff took the position that the device of the Duggan patent is operative. The locked bed device of the Duggan patent is operative.

Plaintiff is absolutely estopped from alleging that any of the softeners, upflow or downflow, with a locked zeolite bed or a free and unconfined zeolite bed, is inoperative. The fact is, as brought out in the testimony, that water softeners of every description, upflow, downflow, with and without locked beds, are perfectly operative and are efficient and economical from a commercial point of view.

This is the first time that the Duggan Patent No. 1,276,629 has been considered from this point of view. Apparently this patent was not called to the attention of the Sixth Circuit Court of Appeals. Had it been, it is within the range of possibility that said Court would not have reached the conclusion that an upflow softener was inoperative and that the locked zeolite bed was inoperative. Accordingly, this is a new proposition and has not

been considered by any court heretofore in the Second and Sixth Circuits; therefore, it should be given serious consideration.

Regardless of this fact, however, the testimony in this case clearly establishes that the upflow zeolite water softener not only is operative but it is a commercial success, and this is true whether or not the zeolite bed of the upflow softener is free and unconfined or is locked.

In view of the fact that plaintiff's patent experts disagree as to what is a locked bed and what is a free and unconfined bed, it is clear that it is a relative matter and one, as a matter of fact, of very little or no importance in so far as efficient commercial softening of water and the regeneration of zeolites is concerned.

With respect to this Duggan Patent No. 1,276,629, Judge Lindley clearly pointed out in his opinion the inconsistent position which plaintiff took in asserting the Duggan Patent No. 1,276,629 in *Permutit* v. *Wadham, et al.* See Judge Lindley's remarks in 37 F. (2d) 385, at 389 (Trans., 562):

> "Plaintiff's own Duggan patent, No. 1,276,629, originally asserted in the cited case in the District Court as one basis for relief, but afterward withdrawn, is a complete rebuttal of the claimed advantages of the downward flow type softener, for, after discussing the difficulties in a downflow device, the patentee said: 'An upward passage of water in the softening phase avoids in large measure these difficulties, giving a greater period of activity since the buoying action of the current keeps the granules apart and prevents packing and channeling.' Duggan pointed out the advantages of his alleged invention, including a locked zeolite bed, where the zeolites are kept in position by a cross plate resting thereon. When plaintiff filed its said suit, relying upon both Duggan and Gans, it was relying under Duggan upon his assertion of the desirability of the upward flow locked bed type softener, and under

Gans, as finally interpreted, upon the theory that neither the lock type nor upward flow was feasible. By dismissing as to Duggan, and by disclaiming under claim 1 as to upward flow types, plaintiff was in a position to attack the efficiency of upflow softeners with locked beds, and to insist, therefore, that the Feldhoff article taught Gans nothing in the making of his apparatus."

The conclusion is inevitable that claim 1 is invalid in view of the Feldhoff article of September 7, 1907.

XVI.

GEBRAUCHSMUSTER NO. 313,671—JUNE 27, 1907, MEETS CLAIM 1.

Gebrauchsmuster No. 313,671, Defendant's Exhibit No. 30 (Trans., 660, 661), discloses the identical arrangement disclosed by the Feldhoff article, Defendant's Exhibit No. 32. While the Feldhoff article did not indicate specifically what the upper layer of material is above the zeolite bed, this Gebrauchsmuster clearly points out that the upper layer *b* above the zeolite bed is gravel.

At this point, attention is directed to the fact that when Mr. Kriegsheim was testifying for plaintiff and referred to Gebrauchsmuster No. 313,671, he stated (Trans., 179):

"It did not work. It gave some soft water but it did not give sufficient water. It gave low and high results. It varied continuously."

Then Mr. Kriegsheim stated (Trans., 179):

"Such an apparatus similar like that was installed in the Riedel factory, and we visited such apparatus, tested it, and opened it, and when we opened it we found that removing the upper plate *b* the excelsior was matted together closely, was full of air bubbles and dirt. There also was some fine

zeolites in it and then the layer *c* also was cemented together to balls, what we called mud balls, and air was in it."

It is interesting that while Mr. Kriegsheim refers to the water softener of the Gebrauchsmuster No. 313,671 as having an upper layer *b* of excelsior, the fact of the matter is that the upper layer *b* is gravel. In this connection, please refer to the translation, Defendant's Exhibit No. 31, of said Gebrauchsmuster No. 313,671, in which, in the middle of the first page (Trans., 661), the following is given under the legend of title:

> "Filter for Removing the Lime from Boiler Feed Water consisting of a box with permutit (zeolith) filler enclosed between layers of gravel, a regenerating Device."

In the first paragraph of the second page (Trans., 662) of the translation, Defendant's Exhibit No. 31, the following is set forth:

> "The subject of the application is shown in the drawings in a vertical section. *a* is a box-like container, the lower part of which is funnel-shaped. The box contains three layers, the lowest layer of gravel *d* of about 30 ctm thickness; then a zeolith filler *c* containing 750 liters of zeolith, and above the latter again a layer of gravel *b* of 20 ctm thickness."

Accordingly, when Mr. Kriegsheim was looking at the drawing of Gebrauchsmuster No. 313,671, disclosing the zeolite body *c* and the gravel layers *b* and *d* on either side thereof, and stated that he saw such a device in operation, he had in mind not the device of the Gebrauchsmuster but a device somewhat similar in construction but one which had a layer of excelsior above the zeolite bed instead of a layer of gravel. Accordingly, the device which he was testifying about as being unsatisfactory because of the excelsior being matted with mud and air and the excelsior having mud balls formed therein

and that was a failure, was not the device of Gebrauchsmuster No. 313,671. Accordingly, Mr. Kriegsheim's testimony on this point is not at all pertinent and does not touch in any manner whatsoever the operativeness of the softener disclosed in Gebrauchsmuster No. 313,671.

Dr. Moses has testified (Trans., 112) about the Feldoff device, which is the same as the device of Gebrauchsmuster Patent No. 313,671; that he has experimented with a completely locked bed, as disclosed in said Feldhoff article, with good results, and that he as one skilled in the art could build a successfully operative device from the teachings of said article.

Defendant's witness Mr. Fritze (Trans., 191) stated that his company, Elgin Softener Corporation, has one hundred locked bed installations in service and that they are giving good satisfaction. He referred particularly to one placed in the estate of the late Ambassador Herrick, to France, located at Cleveland, where the installation has been in operation for a year and a half without a single complaint.

In connection with the operation of the water softener of the Gebrauchsmuster Patent No. 313,671, near the end of the specification, the following paragraph occurs:

> "The gravel layers *b* and *d* have the purpose to prevent that the zeolith becomes slimy by mechanical impurities contained in the feed water. At the height of the lower gravel layer the container *a* is equipped with a manhole in order to remove the gravel when it gets dirty and to clean it."

It is seen therefore that the lower gravel bed *d* in the upflow softener of the Gebrauchsmuster No. 313,671 acts as a mechanical filter to prevent dirt and slime passing up into the zeolite bed and that if it becomes necessary to clean such mechanical filter, such can be done by removing the gravel from the manhole in question, thereby keeping the zeolite bed in a clean operative condition.

A reading of the translation, Defendant's Exhibit No. 31, of the Gebrauchsmuster No. 313,671, will show that, as was shown in connection with the Feldhoff article, each of the elements called for in claim 1 of the Gans patent is present, and the functions which are performed are identical. Claim 1 therefore is clearly invalid in view of the Gebrauchsmuster Patent No. 313,671.

Judge Lindley made the following finding with respect to this Gebrauchsmuster 37 F. (2d) 385 at 389 (Trans., 563):

> "* * * Apparently each of the elements named in claim 1 are presented in this description, with the exception of the alleged implied essential that the bed of zeolites shall be unconfined."

Plaintiff argues that a Gebrauchsmuster is not a patent, and that if it is a patent, its anticipatory value must be found exclusively in the claim as distinguished from the entire disclosure of the Gebrauchsmuster patent. Such a position is unsound, particularly in view of the United States Patent Statutes. This suit is in the United States and involves a United States patent.

In connection with this matter, attention is directed to Defendant's Exhibits Nos. 21 and 22, with respect to the German law on patents and the protection of Gebrauchsmusters, and Defendant's Exhibit No. 23, which is the testimony of Lawrence Langner in *American Chain Co.* v. *C. & G. Spring & Bumper Co.* (this case was settled before decision), which testimony, it is agreed, Mr. Langner would give were he called as a witness in this suit.

A discussion will be given in Appendix A on the question of anticipatory value of Gebrauchsmusters.

XVII.

JUDGE LINDLEY ON ANTICIPATORY VALUE OF GEBRAUCHSMUSTER.

With respect to the anticipatory value of Gerauchsmuster, see opinion of Judge Lindley (see 37 F. (2d) 385, at 390). (Trans., 563.)

XVIII.

GEBRAUCHSMUSTER NO. 341,512, MAY 30, 1908, ANTICIPATES THE ALLEGED INVENTION.

This Gebrauchsmuster, Defendant's Exhibit 28 (Trans., 664 and 665), is a complete anticipation of the alleged invention covered by Claims 1 and 5 of the Gans patent. Attention is directed to the translation, Defendant's Exhibit 29, of said Gebrauchsmuster, to be considered in connection with the drawing of the Gebrauchsmuster itself. The description makes it clear that

> "The subject matter of the present invention is a filter to soften water under use of natural zeolites, artificial zeolites or other substances having the property to absorb lime contained in and hardening the water. The new filter is therefore in particular adapted for domestic use, laundries, restaurants, etc."

The short description is a complete one, in that it states:

> "Letter *a* in Fig. 1 designates a tank, preferably constructed of zinc, in the lower part of which a strainer *b* has been inserted. Tank *a* is supported by frame *c*. In its upper part is positioned a cross-shaped sprinkler *d* (see figures 1 and 2), below the same a filtermass *e* consisting of zeolite or the like. *f* (figures 1 and 3) is a filter bag detachably arranged above sprinkler *d* on case *a*. *g* is a rubber hose or the like forming the connecting link between the water main or any other source of water and sprinkler

d of the filter. As may be seen from Fig. 2, this sprinkler not only serves the feeding and distribution of the water to be filtered but, by reason of its shape it likewise strengthens the walls of case *a* and protects them against warping."

Then, the operation of the device is described as follows:

"The water to be softening flows through hose *g* to case *a*, the inflow being preferably so controlled that sprinkler *d* lies below the level of the water. This secures a quiet flow and prevents unnecessary stirring-up of the zeolite layer. The water to be softened passes through layer *e*, strainer *b*, and runs in a completely softened state to the pail positioned below case *a*. When the zeolites have lost their power to exchange bases and, in consequence, are no longer able to absorb lime, they are regenerated by being flushed with a common-salt solution or the like.

To this end, the filter bag *f* is placed on the case in the manner shown in Fig. 1 and is there fastened by tightening the cord in its edge or in any other appropriate manner, whereupon the common-salt solution is poured in the bag. It slowly passes through the zeolite layer and speedily regenerates the filter."

This Gebrauchsmuster, therefore, clearly shows the casing *a* for containing the zeolites; it shows a support *b* in the form of a strainer for the zeolites; a water supply is provided whereby the water to be softened may be passed through the hose *g* and distributing pipes *d* for a downward passage of the water through the zeolites, the softened water passing outwardly from the lowest point of the casing. Provision is made for regenerating the zeolites by pouring a sodium-salt solution into the upper part of the casing, said solution first passing into the bag *h*. The salt solution passes down through the zeolites for regenerating same, and then is drained through the spout *connected to the lowest point of the casing*.

Therefore this Gebrauchsmuster is a complete antici-

pation of everything set forth in claims 1 and 5 of the Gans patent in suit. It will be noted that the zeolite bed is free and unconfined, so that if it were desired to back-wash the zeolites, such could easily be done, and permit the stratification of the zeolite bed or the forming of a layer of fine zeolites at the top thereof. As Dr. Moses testified, back-washing could be done simply by connecting the hose *g* to the discharge spout at the lowest point of the casing. The claims, of course, do not call for back-washing, but, as indicated, if back-washing is desirable, such can be accomplished, as indicated by Dr. Moses.

Plaintiff may make all the arguments it may wish, to the effect that this device is inoperative or will not produce the results expected of it, that the zeolite bed will channel, etc., but such arguments are all groundless. The fact still remains, as Dr. Moses says, that he or one skilled in the art could make a commercially successful zeolite water softener as a result of a study of the Gebrauchsmuster in question. (Trans., 113.) Gans has not stated in claims 1 and 5 any invention which is not completely anticipated by this Gebrauchsmuster. It is contended, therefore, that claims 1 and 5 are clearly invalid in view thereof.

Judge Lindley found in the Gebrauchsmuster every element called for in the claims in issue. 37 F. (2d) 385 at 389. (Trans., 563.)

XIX.

LEISTER GERMAN PATENT NO. 211,064, JANUARY 23, 1908, ANTICIPATES ALLEGED INVENTION.

The Leister German patent, Defendant's Exhibit 34, and the translation thereof, Defendant's Exhibit 35 (Trans., 653), is a complete disclosure of any alleged invention covered by claim 1, and also by claim 5 if claim

5 is to be construed to be infringed by defendant's upflow softener.

It will be unnecessary to go into great detail in describing the structure and operation of this device. Suffice it to say, reference being had particularly to Figures 1, 2 and 3, that Figure 1 shows the downflow softening operation, Figure 2 the up regeneration operation, and Figure 3 the up rinse operation.

Figure 1 shows schematically a supply of hard water from the reservoir R downwardly through the mechanical filter *b*, through the discharge chamber *d*, and the chemical filter or zeolite bed *c;* the softened water then passing outwardly through valve 1 to the soft water service line *e*. To regenerate, the parts take the position shown in Figure 2, whereupon a sodium-salt solution is supplied through the pipe *f*, valve 1, up through the zeolite bed *c*, through the valve 4, to the waste pipe. Plaintiff will probably argue that the zeolites under such circumstances would be washed out into the waste pipe, but such argument is of no consequence, for it is perfectly apparent that the salt solution may be forced up through the zeolite bed slowly or as rapidly as possible. As a matter of fact, in the early days the zeolite bed was permitted to soak for six hours in the sodium-salt solution, so that a great rush of salt solution upwardly through the zeolite bed was not necessary. After the zeolites are regenerated and it is desired to rinse out the zeolite bed and the mechanical filter, such is done by adjusting the valves, as shown in Figure 3, wherein rinse water will be supplied from any suitable source *h;* the rinse water passing down through the valve 3, pipe *f*, upwardly through the zeolite bed and the mechanical filter bed thereabove, and out through the valve 5 to the waste pipe. No harm can be done in washing the salt water out through the sand filter. If anything, it will do good.

In some of the earlier litigations, plaintiff argued that there would not be enough force to the rinse water to back-wash the zeolite bed and the mechanical filter bed, but apparently plaintiff forgets that these drawings are merely schematic sketches and not working drawings. Plaintiff forgets that its own Duggan Patent No. 1,276,-629, Defendant's Exhibit 49 (Trans., 638), shows and describes schematically a source, in the form of a tank A, indicating a supply of water to be treated. Such an argument, of course, cannot be given serious consideration.

Certainly the Leister patent shows a water softener comprising a casing *a;* it shows a supported bed of zeolites; it shows a controlled supply of water to be softened; it shows a controlled connection for the supply of a regenerating solution, as called for in claims 1 and 5; and, in addition, shows means for discharging or forcing the salt solution or the final salt solution upwardly through the zeolite bed to the waste pipe, as is done by defendant. Therefore, if defendant's upflow softener is to be considered to be an infringement, then clearly the Leister patent is a complete anticipation of claim 5 as well as claim 1.

In some of the prior litigations there was some dispute as to whether or not the zeolite bed in the Leister patent is a locked bed or an unlocked bed. Nothing is said in the Leister patent as to whether or not said zeolite bed is locked or unlocked; but whether or not the Leister zeolite bed is locked or unlocked, the testimony in this case has been sufficient to establish that a zeolite water softener will function efficiently and successfully on a commercial basis whether the zeolite softener is an upflow softener or a downflow softener, and whether the bed is locked or free and unconfined. So, regardless of

what plaintiff may argue, the anticipatory value of this Leister patent is complete.

Judge Lindley found that every element of the alleged invention is present in said Leister patent, even including the free and unconfined bed. 37 F. (2d) 385 at 390. (Trans., 564.)

The Seventh Circuit Court of Appeals found, 43 Fed. (2nd) 898 at 902:

> "* * * The German patent to Hans Leister, No. 211,064 contained drawings wherein the bed of zeolites was unconfined."

This Leister patent may be looked at from another point of view, in so far as anticipation is concerned, and that is—in view of the fact that plaintiff disclaimed the zeolite water softener in which the softening action is an upflow action, because of the Feldhoff Article of September 7, 1907, Defendant's Exhibit 32, which discloses an upflow softener, then by the same token plaintiff must admit that the Leister patent is as much of an anticipation of claim 1 from a downflow point of view.

XX.

WEISS THESIS MEETS ALLEGED INVENTION.

This reference has never been before any other court except in the present Seventh Circuit litigation.

By stipulation, Defendant's Exhibit 59, it was agreed that the Weiss Thesis, Defendant's Exhibit 60 (Trans., 523 and 525) and known as Das Mangan Im Grundwasser, was published in printed form on June 3, 1910. Therefore, while this Thesis is not a publication more than two years prior to the filing date of the Gans application, nevertheless, said Weiss Thesis published as of June 3, 1910, is a reference, because it is earlier than

any date established by plaintiff of its introduction of the invention in question into this country.

Referring first to "Anlage 2," or the sheet of drawings No. 2, of the Weiss Thesis, Defendant's Exhibit 60, it will be noted that the water softener there disclosed includes a casing, near the lower end of which there is a mechanical filter 0.20 of a meter high, a bed of zeolites 0.70 of a meter high; and then at a distance of 0.50 of a meter above the upper surface of the zeolite bed is another mechanical filter 0.25 of a meter high; and there is a stirring device extending into the upper portion of the zeolite bed; all as shown in the drawings of the Gans patent in suit. This reference was cited primarily to show that a free and unconfined zeolite bed, or a zeolite bed with free space above it, was old and clearly disclosed both by the drawings and by description in this Weiss Thesis. Defendant will not quibble as to whether or not Gans originated this apparatus, which according to the Thesis (see the translation Defendant's Exhibit 61) (Trans., 525), page 12 thereof, was tested out at the City Water Works in the City of Glogau, Germany, first on October 20, 1908, and then from January 15 to February 2, 1909.

It is true that this device at Glogau was used primarily for purifying water of iron and manganese by filtering same through calcium aluminate silicate, as indicated on pages 8 and 11 of the translation. However, on page 8 of the translation, under item number 2, as one of the possibilities of the device, it is also stated:

> "To take away the full hardness from a hard water, or part thereof, by passing same through a filter of sodium aluminate silicate, whereby at the same time also iron, manganese and ammonia are extracted from the water."

Referring now particularly to page 11 of the trans-

lation (Trans., 534), attention is directed to the last paragraph thereof, which reads as follows:

> "For the carrying out of the demanganizing experiments the firm *David Grove, Berlin,* which had also executed the other new installations for the waterworks, had set up a round boiler, about 2 meter high and with a bottom surface of about .95 of a square meter, and in this boiler the filtering installation was placed. As will be seen from the attached drawing, there is placed in the bottom of the boiler a bottom of a woven fabric which carries a gravel layer 20 centimeter high. On this gravel layer is placed the zeolite filter, properly speaking to a height of about 70 centimeter, containing about 450 kilogram calcium zeolites, and above the latter, at a distance of 50 centimeter, there is double layer of a fabric which has a layer of marble pieces between the two layers of fabric. This lime filter serves for the purpose of, first, bringing about the possibly required deacidifying of the water, and on the other hand, to prevent the washing away of the permutite in case of uncautious back-flushing."

This Weiss Thesis therefore is a complete anticipation not only of any alleged invention set forth in claim 1, but also of claim 5 if the latter is held infringed, because the exit pipe in the drawing of the Thesis is as close to the lowest point of the casing as is defendant's pipe in its upflow softener.

As a side issue, but nevertheless an interesting one, in connection with the description which has just been quoted hereinabove, attention is directed again to the Gans Article of April 15, 1909, Defendant's Exhibit 47, and more particularly to the translation thereof, Defendant's Exhibit 44, and again more particularly to the translation made by plaintiff's translator (Trans., 451), in which, under the heading "(b) Removal of Manganese or of Iron," the following statement is quoted:

> "At Glogau, for the purpose of removing manganese, 450 kilograms of calcium zeolites, which

rested in an iron tank of 0.95 square meter cross sectional area in a layer of about 0.6 meter deep, were converted according to process III, example 2, first into manganese zeolites by washing with manganese chloride solution, and then back to calcium zeolites by means of calcium permanganate solution."

It is significant that Gans, in his Article of April 15, 1909, therefore was referring to this very 1908 installation in Glogau having the free and unconfined bed and about which Mr. Weise tells us in his Thesis of June 3, 1910, Defendant's Exhibit 60. Judge Lindley so found. 37 Fed. (2d) 385 at 391. (Trans., 565.)

XXI.

OLD SAND FILTERS THE BASIS OF ZEOLITE WATER SOFTENER. BEFORE DEFENDANT MADE ZEOLITE WATER SOFTENER IT MADE SAND FILTERS, BOTH BEING INDENTICAL IN STRUCTURE.

As brought out in this case (Trans., 117), the defendant manufactured sand filters before it manufactured zeolite water softeners, and as stated by defendant's witness, Dr. Moses (Trans., 117), the structures of the defendant's sand filters and zeolite water softeners are identical. Dr. Moses also explained that the old sand filters of the prior art and as made by the defendant had a free and unconfined bed, and that accordingly defendant naturally followed the construction of the old sand filters. Dr. Moses also stated (Trans., 117) that to put in a perforated plate directly down on top of the zeolite bed would cost money and that he saw no particular advantage to it.

Without going into any great detail, attention will be merely directed to the Jewel Patent No. 478,261, July 5, 1892 (Trans., 590), Defendant's Exhibit No. 52, which

shows an old sand filter construction in which there is a free and unconfined bed, to say nothing of other details of construction. Attention will be merely directed to the paragraph beginning in line 93 of page 1 of the specification, the five lines beginning in line 8 of page 2, the paragraph beginning in line 35 of page 2, and the paragraph beginning in line 84 of page 2 of the specification.

Attention is also directed to the Bachman Patent No. 678,532, July 16, 1901, Defendant's Exhibit No. 53 (Trans., 614), showing a sand filter with a free and unconfined bed, and the Driesbach Patent No. 630,870, August 15, 1899, Defendant's Exhibit No. 54 (Trans., 602), showing a filter with a lesser degree of free space. This matter of free and unconfined space is a relative matter, and so far as the record in this case is concerned, appears to be of little or no importance.

XXII.

PLAINTIFF'S TECHNICAL MANAGER ADMITS THAT A ZEOLITE SOFTENER IS NOTHING BUT A SAND FILTER IN CONSTRUCTION. THEREFORE, PLAINTIFF IS ESTOPPED FROM ASSERTING TO THE CONTRARY.

It is significant that not only defendant urges that the zeolite water softener construction is the same as the old sand filter with a free and unconfined bed, but it is interesting that at an unguarded moment plaintiff has taken the identical position. See for example Defendant's Exhibit No. 62 (Trans., 546), which is a letter dated March 18, 1920, written on plaintiff's letterhead to Dr. Charles F. McKenna, 50 Church Street, New York, N. Y., and signed by Thos. R. Duggan, as technical manager of the plaintiff company. Said letter deals with the softening of water by the permutit process, and among

other things in this connection, in the third paragraph of said letter, Mr. Duggan states:

> "The process is a very simple one as you will notice by the literature which we enclose. It is nothing more or less than a filter but the bed, instead of being sand or some other material, is a zeolite which is manufactured in our factory in Brooklyn."

Both the sand filter and the zeolite filter or softener belong to the same filtering art. The Gans patent all the way through speaks about filtering.

As the Seventh Circuit Court of Appeals in *Jay, et al. v. Weinberg, et al.* 262 Fed. 973, in discussing the pumping of water and gasoline, stated at page 974:

> "So appellants' insistence is that the art of elevating water from a lower to a higher reservoir is not analogous to the art of elevating gasoline from a lower to a higher reservoir. We agree that the arts are not analogous; they are identical."

In the instant case, the Seventh Circuit Court of Appeals, 43 Fed. (2nd) 898 at 902, said it is

> "* * * obviously a kindred art."

In this case, defendant contends that the art of purifying water by passing it through a sand filter, or purifying or softening water by passing it through another mineral filter are not analogous arts; they are identical.

The plain fact is that Gans never produced anything of a patentable nature in so far as a water softening apparatus is concerned.

It is believed that Gans did something in the art of processing synthetic zeolites, and for such inventions he was rewarded with patents, see for example his Patent No. 943,535, December 14, 1909, Defendant's Exhibit No. 50 (Trans., 631), and the reissue thereof No. 13,688, of February 17, 1914, Defendant's Exhibit No. 51 (Trans., 635), and his Patent No. 960,887, June 7, 1910, Defend-

ant's Exhibit No. 58. (Trans., 633.) Gans was entitled to his patents on producing synthetic zeolites. He and his assignee were rewarded and had a complete monopoly on those inventions for the statutory period of seventeen years, but Gans did not produce anything of a patentable nature in so far as zeolite water softening apparatus is concerned. Gans knows that such is true, and this plaintiff knows that such is true, for the reason that Gans never filed an application in Germany for a patent corresponding to the patent involved in this suit and as pointed out before in this brief.

On this point Judge Lindley had the following to say (37 Fed. (2d) 385, at page 393) (Trans., 569):

> "I am of the opinion, further, that the Patent Office was right in its conclusion that in substance the claims are merely reproductions of structures found in the prior art; that in such filters as those in Jewel No. 478,261, July 5, 1892, Bachman No. 678,532, July 16, 1901, and Driesbach No. 630,870, we find apparently a free and unconfined bed, the elements injected into these claims by the Court of Appeals for the Sixth and Second Circuits in order to validate the same. Remembering the comments of the Patent Office upon the Bommarius patents, observing that the plaintiff at the present time manufactures sand filters of the same structure as zeolite softeners, it seems clear that there was no invention in either claim because of the substitution of zeolites. Duggan, technical manager of the plaintiff, in March, 1920, wrote a letter, in which he said: 'The process is a very simple one as you will notice by the literature which we enclose. It is nothing more or less than a filter, but the bed, instead of being sand or some other material, is a zeolite which is manufactured in our factory in Brooklyn.'
>
> True it is that the process of softening involves a chemical change as the water passes through the zeolites, whereas the purification of water through sand involves only the removal of physical impurities, yet the mere substitution of the zeolites for

sand is not invention, in view of the fact that zeolites themselves were previously patented by Gans. (No. 943,535, reissue thereof No. 13,688, and No. 960,887.) He undoubtedly accomplished invention in those patents, but, when he merely adapted the sand filter construction to the use of zeolites by substituting the latter for sand, he did not accomplish invention. The art of filtering and that of softening, if not identical, are surely analogous. *Jay et al.* v. *Weinberg et al.* (C. C. A. 7) 262 F. 973."

XXIII.

JUDGE LINDLEY'S SUMMING UP OF THE PRIOR ART.

In this connection, your Honors' attention is directed to Judge Lindley's opinion, 37 Fed. (2d) 385, at page 391 (Trans., 566):

"I have discussed the prior art references at some length, because these claims have been held valid by the Courts of Appeals for the Second and Sixth Circuits in the cases herein first cited. Those courts, at one time or another, had before them all of the references mentioned herein, except the Weiss Thesis. Having the greatest respect for those courts, I have taken great care in my examination of the prior art and of the evidence here presented in order to determine whether my convictions in the contrary direction are proper. To me it seems manifest that, had this situation been as fully presented to the various courts before whom there has heretofore been litigation as here, there could have been but one conclusion. As stated by the Supreme Court in *Mast et al.* v. *Stover Mfg. Co.*, 177 U. S. 485, at page 488, 20 S. Ct. 708, 710, 44 L. Ed. 856: 'Comity persuades; but it does not command. It declares, not how a case shall be decided, but how it may with propriety be decided. It recognizes the fact that the primary duty of every court is to dispose of cases according to the law and the facts; in a word, to decide them right. In doing so, the judge is bound to determine them according to his own convictions. If he be

clear in these convictions, he should follow them. It is only in cases where, in his own mind, there may be a doubt as to the soundness of his views that comity comes in play and suggests a uniformity of ruling to avoid confusion, until a higher court has settled the law. It demands of no one that he shall abdicate his individual judgment, but only that deference shall be paid to the judgments of other coordinate tribunals. Clearly it applies only to questions which have been actually decided, and which arose under the same facts.'

Plaintiff contends that the prior art references from Germany are not sufficiently clear to prove anticipation, and, in view of the uncertainty of certain translations, it may be that the teachings are not of sufficient degree of certainty to satisfy the requirements stated by the Supreme Court as necessary to support anticipation. But Gans was bound by the teachings of the prior art, and the question arises whether, with those teachings in mind, he exercised merely the mechanical skill of one learned in his profession, or achieved invention.

The reasons ordinarily urged against foreign teachings do not find the usual basis here, for the applicant resided in Germany; the publications were published there, some by himself, some by his associates, some by scientists like himself. It was in America that he applied for a patent, upon claims never submitted to his own government, to a Patent Office obviously without notice of these German publications. He assigned his application, and eventually it came to the plaintiff, some of the officers of which were associated with him in Germany. Yet we do not have his story of his experiences.

What had the art taught Gans when he filed his application? His own patents on zeolites and his article of April 15, 1909, demonstrate that he had learned how to make zeolites, what their properties were, and how to make a softening apparatus. He had the benefit of Feldhoff's teaching of 1907, of the Techniche Rundschau article in January, 1909, and of the Weiss Thesis early in 1910. He knew what Leister had patented; he knew the titles of the two German Gebrauchsmuster, registered and pub-

lished to the world. He knew everything reasonably to be drawn from the prior art as hereinbefore set forth, and that, it seems apparent to the court, furnished everything that any one skilled in the art would need in order to perfect the apparatus produced. Neither the idea of the container nor that of a bed of zeolites was new. Others had produced a softening apparatus with a layer of sand, and on top of it a layer of zeolites. There were many filtering devices containing means for the passage of water through the casing; for cutting off the supply of the water; and for passing through the casing regenerating solution. Indeed, plaintiff's asserted patentability of the claims is ultimately confined to the element that the unconfined bed of zeolites in a downward flowing softener shall be free and unconfined, and upon claim 5 to the same in upward flowing types also and the additional element of attaching the drain for the salt solution at the lowest point of the casing. Only these elements are left to save plaintiff's claim of invention.

To say the claims include as an essential requirement that the bed shall be unconfined is to read into the claim something that is not stated in specifications, description, or claim, but which defendant insists must be implied because of the so-called stirring apparatus, which is never used, and the statement as to backwashing. Obviously neither implication is necessary or logical. Backwashing, under the evidence, may be accomplished whether there be an unconfined bed or not, though it may not be so efficient in a confined bed. Furthermore, the stirring apparatus can be used in a confined bed, it being necessary therewith simply to run the pinion, upon which the stirring apparatus turns, through the cover confining the zeolites, and attach thereto, below the cover, the stirring blades.

I am of the opinion that there is no warrant for reading into claim 1 any requirement that the bed of zeolites shall be free, but, as stated, if that element is necessarily implied, it likewise is imported in the prior art, as shown by Gans' own publication, for, if backwashing in the patent implies a free bed, so backwashing in his early article, dealing with the

same subject matter, must import the same conclusion.

Furthermore, the testimony of the plaintiff's president and the language of the prior publications is such that Gans was bound to know, and did know, as early as the latter part of 1907, or the early part of 1908, that some of the people skilled in the art believed that the body of zeolites should be free and unconfined, and that he himself made a device with such a bed more than two years prior to the filing of his application. In other words, the state of the art in 1909 was such that he and his associates believed that in an apparatus, such as any of them described, a free and unconfined bed of zeolites would prove the more practicable.

Then, too, I am not willing to say, even if some may believe that the idea of a free bed of zeolites were not in the prior art, that the addition of the same to the combination amounted to invention. Gans knew the properties of zeolites; he knew that in order to function they must be charged with salt, and, when exhausted, recharged; that mechanical filters were desirable to eliminate the physical impurities of water; and that, after regeneration, the container and its contents should be rinsed of excess salt. He knew that the nature of any material like zeolites or sand is such that, in order that they may be thoroughly cleansed, the granules should, as nearly as possible, be in suspension, exposing all their sides to the liquid in which they are bathed. He knew that, if he wanted to wash sand, he could best do so when it is an uncompacted or suspended mass, and that the same was true of zeolites. It was therefore obviously necessary that, to get complete submersion, he must leave the upper part of the zeolites to a certain extent at least unconfined. He knew further that, in order to secure lack of compactness or suspension, there must be some free space above the body of zeolites, furnishing room for expansion when flooded with water. I do not believe that, even though we read into these claims an unexpressed intention on the part of Gans that the body of zeolites should be open, and even though the idea of a free space was not old, the result amounted to

anything more than the natural and obvious method of meeting the problem by one skilled in the art.

As to claim 5 we have even a more weak assertion as to one element—means for removing the salt connected to the lowest point of the container. It was the addition of that element only that procured the allowance of the claim. Was this invention? Suppose we have before us an apparatus as claimed in claim 5 without this last element? What is the easy, natural, and obvious manner in which to drain the salt solution, which, following the course of gravitation goes to the bottom of the casing? A school boy would reply that the obvious manner is to put a plug and tap at the lowest point.

A multiplicity of elements may be added indefinitely without creating a patentable combination, unless by their collocation a new result is produced. The adding of a plug and connecting the same to a waste pipe, in order to drain off the solution of salt from Gans' container, was merely solving the problem of a plumber.

I am of the opinion, further, that the Patent Office was right in its conclusion that in substance the claims are merely reproductions of structures found in the prior art; that in such filters as those in Jewel No. 478,261, July 5, 1892, Bachman No. 678,532, July 16, 1901, and Driesbach No. 630,870, we find apparently a free and unconfined bed, the elements injected into these claims by the Court of Appeals for the Sixth and Second Circuits in order to validate the same. Remembering the comments of the Patent Office upon the Bommarius patents, observing that the plaintiff at the present time manufactures sand filters of the same structure as zeolite softeners, it seems clear that there was no invention in either claim because of the substitution of zeolites. Duggan, technical manager of the plaintiff, in March, 1920, wrote a letter, in which he said: 'The process is a very simple one as you will notice by the literature which we enclose. It is nothing more or less than a filter, but the bed, instead of being sand or some other material, is a zeolite which is manufactured in our factory in Brooklyn.'

True it is that the process of softening involves a

chemical change as the water passes through the zeolites, whereas the purification of water through sand involves only the removal of physical impurities, yet the mere substitution of the zeolites for sand is not invention, in view of the fact that zeolites themselves were previously patented by Gans. (No. 943,535, reissue thereof No. 13,688, and No. 960,887.) He undoubtedly accomplished invention in those patents, but, when he merely adapted the sand filter construction to the use of zeolites by substituting the latter for sand, he did not accomplish invention. The art of filtering and that of softening, if not identical, are surely analogous. *Jay et al.* v. *Weinberg et al.* (C. C. A. 7) 262 F. 973.

From what has been said it is apparent that there should be a decree dissolving the temporary injunction heretofore entered, declaring claims 1 and 5 invalid for want of invention, and dismissing the bill for want of equity at the cost of plaintiff."

XXIV.

THE SEVENTH CIRCUIT COURT OF APPEALS SUMMING UP OF THE PRIOR ART.

Judge Evans, speaking for the Court of Appeals in this case, (43 Fed. (2d) 898, at 902) stated as follows:

"The sum total of all this prior art citation leaves it tolerably clear (a) that it was old and well recognized to use zeolites for softening water, (b) to regenerate zeolites with salt, and (c) that the usual apparatus for accomplishing such purpose was in general similar to the Gans apparatus which in turn was like water filtering apparatuses widely used.

This apparatus consisted almost of necessity of a container, usually a steel casing, into which the water entered and out of which it passed. The location of the entry and the exist holes was optional with the mechanic and depended on whether he desired the water to flow downward or upward.

Into this case the filtering material was placed, usually resting on a bed of gravel. Over the filtering

material another bed of gravel was sometimes, though not always, placed, to prevent the filtering material from washing away. This upper bed of gravel either rested upon or was placed somewhere above the bed of filtering material. Both ways are suggested, and both ways were used.

In addition means had to be provided for permitting the regenerating material to pass in and out of the casing and through the filtering material. Inasmuch as there was no advantage in introducing the salt below or above the zeolites, the mechanic or plumber naturally placed the exit hole at or near the bottom of the casing.

Claim 5. The validity of claim 5 can only be sustained (in view of our holding claim 1 invalid) on the theory that the last-named element 'means connected to the lowest point of the casing for removing the salt solution' introduced a novel element which evidenced something more than the skill of a mechanic. If there be novelty in this element it is traceable solely to the location of the means at the lowest point of the casing. To provide the means for an outlet at the bottom of the casing (to secure a perfect drain) can, we think, by no stretch of the imagination, be described as invention. It is hardly conceivable that one (a mechanic or an unskilled artisan) constructing an apparatus of the kind here under consideration would locate the opening to drain off the substance (liquid or solid), temporarily inserted, at any place other than at the bottom.

Moreover, the prior art here, too, stands, between Gans and a valid patent. The Technische Rundschau contains a drawing of an apparatus for water softening through the use of zeolites and for regenerating the zeolites, which drawing located the means for removing the solution at the lowest point of the casing. One of the Bommarius filters had its outlet at the extreme bottom.

Finally it might be added that appellee's structures have their openings near the bottom but not at the lowest point of the casing, and therefore do not infringe claim 5. This is not so as to certain discarded structures, but, as to its presently used structures, infringement of claim 5 is not shown.

Counsel for appellant persuasively and properly argue that the presumption which arose from the grant of this patent has been greatly strengthened by the holdings of several courts. The force of this argument cannot be minimized. The respect we entertain for these courts need hardly be stated. But the litigants have a right to the independent judgment of this court. The responsibility resting on us cannot be delegated. Nor can it be avoided. Nor can we ignore the opinions of other courts that have filed carefully prepared opinions wherein different conclusions have been reached. Moreover, we are satisfied that the record in the instant case is somewhat different from the records presented on the other appeals.

Extensive use has also been stressed by counsel as a reason for upholding the patent. That there has been an extensive use of zeolites for water softening purposes must be admitted. Such use strongly evidences outstanding merit in this mineral compound for water softening purposes. We are not, however, impressed with the argument that the extensive use is attributable to the apparatus for holding and regenerating the zeolites. The art was advanced by the discovery of the product,—zeolite in natural and artificial form,—and in the discovery of the water softening qualities of this product, supplemented by the further discovery that such article could be regenerated readily and cheaply. Gans obtained a patent in this country on zeolites and the process for making them. If this patent were assailed and doubt existed as to its validity, the extensive use relied on would strongly support the patent. But we cannot ascribe this extensive use to both the commodity and to the apparatus for its use, when convinced that its actuating cause is to be found in the article only.

The decree is affirmed."

XXV.

DEFICIENCIES OF THE GANS PATENT IN SUIT.

Plaintiff attacks some of the prior art references on the grounds that they are not full disclosures; that they are deficient. In prior litigations, plaintiff has been extremely critical even to the extent of considering that the drawings in such prior art patents must be mechanical drawings bearing definite dimensional proportions, to be perfect in every respect as distinguished from schematic drawings. Defendant's position is that the references are complete teachings and anticipations of the alleged inventions of claims in issue, and as a matter of fact, are more complete in most instances than the Gans patent itself. If there was ever a patent that lacks information for teaching those skilled in the art, it is the Gans patent in suit.

Plaintiff's witness, Mr. Waterman (Trans., 63), admits that the Gans patent in suit does not give the quantity of zeolite in the tank; it does not give the rate of flow of water to be softened; it does not give the concentration of the regenerating solution. As a matter of fact, there is a lot more than the Gans patent does not disclose and which are vital deficiencies. For example, as brought out by defendant's witness, Dr. Moses (Trans., 91), Gans has no provision for backwashing nor any provision for disposing of the slime. There is no connection into the casing providing for backwash water, nor is there any connection above the zeolite filter bed in the Gans patent for passing the collected dirt and slime to the sewer. (Trans., 91.) As a result thereof, Dr. Moses states (Trans., 92), that gradually the bed would

become fouled and inoperative due to the insulation of the particles from the water flowing through it.

Although plaintiff now makes a big point of the grading of zeolites and the formation of a high resistant layer of zeolites at the top of the bed, Dr. Moses brings out the fact that there is no statement in the Gans patent on this point (Trans., 92), and Dr. Moses also brings out the fact that there is not a single statement in the Gans patent about the zeolite bed being free and unconfined. As a matter of fact, plaintiff's expert witness, Mr. Waterman (Trans., 70), in answer to the following question:

> "Will you please answer my question? I ask you where in the specification in the Gans patent in suit there is a statement about a free and unconfined zeolite bed. Point it out, that is what I want,"

replied:

> "That language is not used, so far as I know, anywhere in the specification."

Also, Dr. Moses brings out the facts that there is no statement in the specification of the Gans patent with respect to the source of regenerating brine. No statement is made of how much brine is to be used. No statement is made with regard to the saturation of the brine nor the rapidity of injection of the brine. (Trans., 92.) Under cross-examination (Trans., 117), he brings out the fact that there is no piping for the removal of dirt and slime, and also that the Gans drawings (Trans., 117) are indefinite.

Certainly one skilled in the art would have to exercise more imagination in attempting to build commercially successful zeolite water softeners from the disclosure of the Gans patent in suit than he would in following the teachings of the prior art publications and prior patents.

XXVI.

UPFLOW ZEOLITE WATER SOFTENERS ARE A COMMERCIAL SUCCESS AND ARE SUPERIOR TO DOWNFLOW SOFTENERS. PLAINTIFF'S PATENT EXPERT WAS FORCED TO ADMIT IT. IF SIXTH CIRCUIT COURT OF APPEALS HAD BEEN SO ADVISED, IT WOULD HAVE HELD THE GANS PATENT INVALID.

Plaintiff through its patent experts, somehow or other, made the Sixth Circuit Court of Appeals believe that the upflow zeolite water softener could not possibly be successful or commercially successful for softening water. The court said, in *The Permutit Company* v. *Wadham, et al.*, 13 Fed. (2nd) 454, at 456:

> "One point now stressed is in regard to plaintiff's disclaimer. Under the language of the claim as issued, the flow of the water through the zeolites might have been either upward or downward. Early in the litigation a German publication was produced which was claimed to disclose the same process, but which showed the water passing upwardly. The drawings and description in the patent in suit showed that the water flowed downwardly, and Gans became convinced, even if he did not at first appreciate, that the downward flow, as distinguished from the upward, was practically essential to a commercially successful process. He therefore disclaimed so much of the patent as might reach a process employing the upward flow, and thereby, in effect, amended and limited his claim to a device employing downward flow."

And then on page 457, Judge Denison, speaking for the court, said:

> "Nor does it follow that in this particular environment there is no patentable distinction between the downflow and the upflow. The former works satisfactorily, and it seems probable, if not certain, that the latter would not. The reasons why one will and the other will not show that this difference

is one of those which are not so simple as they seem."

That, if you please, is the reason why the Sixth Circuit Court of Appeals did not hold claims 1 and 5 invalid. That court believed that the upflow zeolite water softener would not and could not successfully operate. But how wrong that court was. How sadly that court was deceived.

The defendant here is not concerned with the fact whether or not plaintiff knew that the upflow softener would operate successfully on a commercial basis. It can have its own opinion on that point. But the fact still remains that the record in this present case is filled, is permeated with the thought expressed by plaintiff's witnesses and by defendant's witnesses, that not only is the upflow zeolite water softener a commercially successful type of water softener but, if you please, it is superior to the downflow water softener.

This plaintiff, of course, is in no position to state that an upflow zeolite water softener will not operate successfully on a commercial basis, for it has granted licenses to the Paige-Jones Chemical Co., Inc., of New York, to International Filter Company, of Chicago, and to The Duro Company, of Dayton, Ohio, to make and sell upflow zeolite water softeners, and only that type of water softener.

After Major Fritze, in testifying for defendant (Trans,. 151), had told of the successful operation of the Paige-Jones upflow zeolite water softeners in Detroit, at the plant of the Detroit Edison Company, said upflow softeners being the largest zeolite water softening units known in this country, Mr. Paige, president of Paige-Jones Co., called as a witness for plaintiff, after stating that his company was a licensee under the patent here

in suit, on cross-examination testified as follows (Trans., 156) (Original R. 442):

"Q. That is an upflow type of water softener, is it not?
A. Yes.
Q. And you consider that to be a very successful type of water softener?
A. Yes.
Q. And do you consider it to be a better type than the downflow?
A. Yes.
Q. Do you?
A. Yes."

So here is one of plaintiff's own witnesses who not only testifies and believes that the upflow zeolite water softener is superior to the downflow, but he seemed to be happy to have the privilege of saying so.

Then Mr. Charles P. Eisenhauer, who was attending the trial apparently as an interested observer in behalf of The Duro Company, another licensee, was called by the defendant as a witness to testify about a Duro upflow softener which defendant had purchased previously. Mr. Eisenhauer testified (Trans., 193) that he does general research work and is engineer for The Duro Company; that he has had six years in the water softening business; that the Duro softener, produced by defendant as Defendant's Exhibit No. 67, is one of Duro's G models (Trans., 193); that he personally designed that upflow softener; that his company has sold at least 30,000 of the Duro type of upflow softener (Trans., 194) in Canada, United States, England and various places (Trans., 194); that the Duro Company limits its manufacture of water softeners to the upflow type of water softener; that he thinks the upflow water softener is superior to the downflow water softener, and that he gives that answer as a result of his experience. He stated that he did not know

whether or not the license his company had limited it to the manufacture of upflow water softeners, but he stated (Trans., 194):

"We would not make any other type."

Plaintiff's witness Mr. Tiger (Trans., 31; Orig. R. 88) testified as follows:

"Q. Are you of the opinion, then, that an upflow softener is commercially operable?

A. Yes, sir.

Q. For producing good commercial results?

A. Yes, sir."

Plaintiff's patent expert Mr. Hammer, in testifying about the Rundschau upflow softening device, Defendant's Exhibit No. 19 (Orig. R. 481; Trans. 171), said:

"It did very well."

Plaintiff's patent expert Mr. Waterman was forced to admit that the upflow zeolite water softener is superior to the downflow. Mr. Waterman in testifying about zeolite water softeners stated (Trans., 54):

"The difficult thing in any bed of that kind is to get water to flow through it uniformly. It is extremely difficult to prevent water from taking a preferred route, what is called channeling, and this raising up of the bed in backwashing, boiling it, which makes it expand somewhere ordinarily in the neighborhood of 20 or 25 per cent in washing, is quite violent, but say from 10 to 25 per cent increases in bulk through this backwash operation and that gives the usefulness of the free space that appears in the patent, the top of the permutit, and commences obstruction above which in the patent is the grating or perforated plate *c*."

Then Mr. Waterman testified (Trans., 66):

"Q. * * * Now then, your point there is that this backwashing destroys the channeling; is that correct?

A. It is not at all what I had in mind. What I had in mind was that it prevents it.

Q. What?
A. What I had in mind was that it prevents it.
Q. Prevents channeling?
A. Yes."

Then, with that understanding, Mr. Waterman was further cross-examined as follows:

"Q. All right. Now let's stick to that. Now, then, in the upflow softening the water flows upwardly through the filter bed in exactly the same way as it has done in backwash. Therefore in upsoftening the water will go up in the manner to prevent channeling, will it not, and channeling will very rarely occur; is that not correct?"

There was much quibbling upon this point, and finally the court became tired of the quibbling and stated (Trans., 67):

"The Court: It doesn't seem to me that it makes any difference whether you backwash or whether you soften. The water proceeds through at the same rate, through the same substance and the same result is bound to occur.

Mr. Byron: Precisely.

The Witness: So far as the lifting and grading of the bed is concerned.

Mr. Byron: Q. I don't want to quibble but I want to get in this word, 'channeling,' and in so far as channeling is concerned.

A. Yes."

Defendant then tried to bring out through plaintiff's patent expert Mr. Waterman that in view of the fact that he had testified that (Trans., 54):

"it is extremely difficult to prevent water from taking a preferred course, what is called channeling,"

and that he later admitted that the upflow of water through the zeolite bed prevented channeling, that therefore channeling of necessity must be limited to the downflow zeolite water softener.

Mr. Waterman, inevitably, was caught in his self-made

trap and continued to quibble, whereupon the court stated (Trans., 68):

> "The Court: Then bear that in mind on this question. It seems to me you have not answered Mr. Byron's questions directly. You have been quibbling on the questions. The question, as I understand it, is whether, assuming this to be at the rate of 58 gallons per minute, in that commercial operation of an upflow softener is a successful commercial operation. Assume that fact and admitting that that is the rate and that is a wise rate at which the backwash occurs, does it not follow that the tendency toward channeling must therefore be limited to downflow softeners?"

The witness answered "no", and after considerable questioning by the court, finally stated (Trans., 69):

> "The Court: You have said to the contrary, if you analyze it. You said yesterday, you told the court yesterday that one of the great difficulties was in the flow of this water down through the body of these zeolites, there was a tendency of the water to seek a channel and a tendency toward a—
>
> A. I did not intend to limit that to downflow. That is equally true of upflow unless at a backwash rate.
>
> The Court: You admit that the successful commercial rate is the same rate as a backwash rate? You do not have any channeling, you just stay in the upflow rate, do you?
>
> A. Very true, very true.
>
> The Court: Then if you were to operate all these upflow softeners at a commercially successful rate, namely, fifty-eight gallons per minute, you would not be troubled about channeling?
>
> A. No."

Therefore, plaintiff's patent expert Mr. Waterman finally admitted that at a commercially successful upflow rate there would be no channeling in the upflow water softener.

Therefore, this great difficulty of channeling through the bed must be limited to the downflow water softener.

The upflow water softener therefore, following Mr. Waterman's reasoning, is superior to the downflow type.

After all of the favorable testimony of plaintiff's witnesses, Mr. Tiger, Mr. Paige, Mr. Hammer, Mr. Waterman and the testimony of Mr. Eisenhauer, the research expert of plaintiff's licensee, The Duro Company, which testimony clearly established the successful commercial operation of upflow water softeners, and the testimony of Mr. Paige and Mr. Eisenhauser that the upflow water softener is superior to the downflow water softener, it would seem to be unnecessary for defendant to refer at length to the testimony of the same general character of its witnesses.

Suffice it to say that defendant's witness Dr. Moses (Trans., 90) testified with respect to the preference of upflow and downflow softeners as follows:

"In my opinion upflow softening is preferable." In his testimony he gives many reasons why such is the case. No backwashing necessary. (Trans., 93.) Gives reasons for channeling in downflow. (Trans., 109.) More economical in use of rinse water. (Trans., 105, 91.) More efficient softening action due to greater surface exposure of zeolite. (Trans., 91.) Other reasons. (Trans., 91 and 92.)

The court's remarks are to be noted. (Trans., 80.)

Defendant's witness Mr. Fritze in his testimony (Trans., 149) gives his reasons why the upflow water softener is superior to the downflow water softener and cites as a remarkable success the largest zeolite water softener units as being upflow softener units and being installed at the Detroit Edison plant, Detroit, Michigan.

Had the Sixth Circuit Court of Appeals known the

real truth about the commercially successful upflow water softeners, it never would have held that the upflow water softener was not commercially operable, and it would not have disregarded any references disclosing upflow water softeners, and, it is contended that it would not have held claims 1 and 5 valid. Inevitably, if the Sixth Circuit Court of Appeals had the evidence in this case before it, it would have held claims 1 and 5 invalid and would have held defendants' upflow water softener and its 1925 downflow softener as noninfringing devices. The Sixth Circuit Court of Appeals would have held defendant's upflow softener and its 1925 downflow softener as not infringing claim 5 for the reason that the ejection pipe is not connected to the lowest point of the casing. In this connection, see its decision in *Permutit* v. *Wadham*, 13 Fed. (2nd) 454, at 456:

> "* * * but in which apparently small steps turn out to be vital, as for example, the necessity of draining the salt water from the very bottom instead of from a more convenient point a little higher."

The ejection pipe in defendant's said softener is not connected to the lowest point of the casing; and indeed, its receiving opening in the casing is more than

"a little higher"

from the very bottom of the casing. It is perfectly obvious that defendant's said structures do not infringe the claims in question and that said claims are clearly invalid.

These remarks apply with equal force with respect to the Second Circuit Court of Appeals which, in *Permutit* v. *Harvey*, gave considerable credit to the Gans patent, but in Permutit's Second Circuit case, wherein four types of upflow water softeners were involved, the court was not so complimentary to the patent [illegible]t it had

theretofore sustained. Previously the trial court had held all four of the Paige-Jones upflow softeners, Defendants' Exhibits Nos. 38 and 39 (Trans., 495, 497), to be infringing and issued an injunction against their further manufacture, use and sale. However, the Court of Appeals of the Second Circuit reversed the trial court and ordered the withdrawal of the injunction with respect to the three upflow water softeners shown by Defendant's Exhibit No. 39 (Trans., 497) (22 Fed. (2nd) 916.) In said three Paige-Jones upflow softeners, it will be noted that the ejection pipes are not connected nor do they rest upon the bottom of the casing, but on the contrary, are spaced therefrom. It is submitted therefore that with this attitude of the Second Circuit Court of Appeals, and with the opinion which has been written by the Sixth Circuit Court of Appeals, that said courts would have held against the Gans patent with respect to defendant's structures in question

XXVII.

FREE AND UNCONFINED BED. THE CLAIMS ARE INVALID BECAUSE THERE IS NO STATEMENT IN THE SPECIFICATION THAT THE ZEOLITE BED IS FREE AND UNCONFINED, THE LIMITATION INSERTED BY THE SECOND AND SIXTH CIRCUIT COURTS OF APPEALS TO SAVE THE CLAIMS.

The Second Circuit Court of Appeals in *Permutit* v. *Harvey*, 279 Fed. 713, and the Sixth Circuit Court of Appeals in *Permutit* v. *Wadham*, 13 Fed. (2nd) 454, injected an element into claims 1 and 5 for the purpose of sustaining said claims. For example, Judge Denison, in speaking for the Sixth Circuit Court of Appeals, at page 458, stated:

"It is true that under the construction which we

> give the patent, and in order to sustain the patentable novelty of the device, the claim must be limited so as to involve the use of a zeolite bed which is free and unconfined upon the top, and that the specification does not expressly state this limitation, nor does the exact language of the claim compel it."

The Second and Sixth Circuit Court of Appeals seized upon this point because it was fed to them by plaintiff's patent experts. Plaintiff's patent expert Mr. Hammer in the Paige and Jones case (R. 94) stated (Trans., 73):

> "Once Gans had shown that the way to make a successful zeolite softener was to leave the bed free and unconfined, the arrangement of the pipes so that the water would run one way or another is nothing but a plumber's job."

In the first place, such statement is an admission by plaintiff that there is no invention in a downflow softener over an upflow softener, or vice versa, which, in effect, means that when plaintiff disclaimed with respect to the upflow in claim 1, as a matter of fact, it disclaimed the whole invention in claim 1.

In the second place, such statement shows that plaintiff's own experts admit that if Gans made any invention, it was in providing free space above the bed of zeolite. Plaintiff's patent expert Mr. Hammer at (R. 93) in the Paige and Jones case again stated:

> "As I understand it, the important discovery made by Gans, and the feature of construction which differentiates the Gans apparatus from unsuccessful apparatus prior to him, is the free and unconfined bed to which I have referred, and which prevents the accumulation of dirt and slime in the bed."

If that was Gans' important discovery and his important contribution to the art, why didn't he make some statement of that important feature in the specification? Why didn't he make some statement in the claims about that all-important discovery?

Judge Denison, speaking for the Sixth Circuit Court of Appeals in an endeavor to justify sustaining claims 1 and 5 by injecting the "free and unconfined bed" element into them, states, 13 Fed. (2nd) 454, at 458:

> "The specification and drawing provide for the occasional descent into the zeolite bed from above of a revolving stirrer, and this makes it clear that the top of the zeolite must be free and unconfined, under the contemplation of these claims, 1 and 5, which do not imply the nonuse of the stirrer."

It is peculiarly significant that the Gans specification does not say a single word about, nor do the drawings provide for, "the occasional descent into the zeolite bed from above of a revolving stirrer."

A mere inspection of Figure 2 of the drawings will show that it would be impossible to raise the stirrer from the position shown, because the shaft *y* and its gear *u* would prevent it. Judge Denison then goes on to state:

> "Limitations upon a claim may not be imported from an ambiguous specification into an unambiguous claim for the sake of saving the validity of a patent,"

referring to *McCarty* v. *Lehigh*, 160 U. S. 110, 116. However, Judge Denison then turns around and finds in this patent a structure which in fact does not exist there and cannot thus function in the way which he mentions, and upon that error imports into the claims a feature not expressed nor implied in the specification.

In that same Supreme Court case of *McCarty* v. *Lehigh Railroad Company* in discussing importing a feature into a claim, among other things, it is stated:

> "The difficulty is that if we once begin to include elements not mentioned in the claim in order to limit such claim and avoid a defense of anticipation, we shall never know where to stop. * * * This doctrine is too obviously untenable to require argument."

Plaintiff has taken the position that it is necessary that the zeolite bed be free and unconfined in order that the softener may be made to operate.

Defendant has proved conclusively that such is not the case. Defendant has proved that the zeolite water softener will operate successfully, on a commercial basis, whether the softener is of an upflow type or downflow type, and whether or not the bed is locked or is free and unconfined.

As pointed out, plaintiff is estopped to argue that a softener with its zeolite bed locked will not function properly, for it has taken the contrary position in its Duggan Patent No. 1,276,629—Defendant's Exhibit 49, (Trans., 638), the statements of Duggan in his specification being those of the plaintiff, for the reason that plaintiff adopted the position expressed in the Duggan patent before the Duggan patent ever issued by accepting an assignment of said Duggan patent. Furthermore, plaintiff is estopped from contending that a locked bed will not operate because it started suit against Wadham *et al.* for the infringement of said Duggan patent at the time it started suit for the infringement of the Gans patent; and, as pointed out above, only when it became embarrassing to plaintiff when it was blowing hot and cold at the same time, did it withdraw the Duggan patent from the suit.

The history of all of plaintiff's litigation involving the Gans patent is filled with inconsistencies which cannot be justified, particularly in view of the record in this case.

If a zeolite water softener with a locked bed was inoperative from plaintiff's point of view, why, then, did plaintiff enter its disclaimer with respect to upflow softening because of the Feldhoff article of September 7,

1907—Defendant's Exhibit 32. (Trans., 477.) The Feldhoff article discloses a locked zeolite bed, and it was because plaintiff honestly knew that a zeolite water softener with a locked bed would operate that it entered the disclaimer. However, in this present case, the matter of the operativeness of a locked bed is definitely settled. The locked bed zeolite softener does operate, and does operate successfully on a commercial basis. Such locked bed zeolite water softeners are in successful operation to-day, and have been for years.

Defendant's witness Dr. Moses testified as to the installation of such a locked bed zeolite water softener at the Desplaines River Sewage Plant at Maywood, Illinois, and submitted a blue print of said device—Defendant's Exhibit 66—which shows that there is only three-quarters of an inch space from the top of the zeolite bed to the perforated plate thereabove. He measured this himself. (Trans., 187.) Defendant's witness Mr. Smith actually measured the same and agreed with the conclusions of Dr. Moses. (Trans., 188.)

Undoubtedly there was no space between the top of the zeolite bed and the upper screen in said Maywood installation at the time the installation was made, but due to use of the softener from its date of installation, July 24, 1928 (Trans., 190), to the present time, there necessarily has been some shrinkage. Be that as it may, according to Mr. Waterman's definition of a locked bed, the water softener at Maywood most certainly is a locked zeolite bed.

Defendant's witness Mr. Morgan, a chemist of the Sanitary District of Chicago, who recognized the sketch Defendant's Exhibit 66 as being that of the water softener in question, has had charge of that softener since its installation. (Trans., 189.) He stated that the raw

or hard water which has been softened by that softener is of 22 grains hardness (incidentally, a very hard water), and that said water was softened in accordance with the soap test—three drops of soap in 15 C. C. of the effluent water, which soap test was prescribed by this plaintiff, the Permutit Company. (Trans., 189, 190.)

Mr. Morgan states that the softener has been connected up for continuous use, but that it is used only as demand is made upon it. But he stated (Trans., 190) that he personally regenerated the softener sometimes once in five weeks and sometimes once in three days. He also stated that the softening capacity of that softener was 15,000 gallons between regenerations; and on an average he regenerated the softener in each instance after 16,000 gallons of water had been softened, showing that the softener with its locked bed is functioning successfully in accordance with commercial requirements, giving full capacity in softening. He also testified (Trans., 190) that the top of the water softener had not been removed from the time the installation was made in July, 1928, until some time in October, 1929, when inspection was made for the purposes of this suit.

There is one clean cut case in which a water softener with a locked zeolite bed operates successfully on a commercial scale.

Defendant's witness Mr. Fritze testified how his company, Elgin Softener Corporation, has made at least one hundred installations where the zeolite bed is locked. (Trans., 191.) He referred to one installation particularly, that of the one in the late Ambassador Herrick's Estate at Cleveland, which had been in service for a year and a half, and that no complaint had been made. While upon cross-examination he stated that due to shrinkage of the bed there may be an inch to an inch

and a half space develop between the top of the bed and the plate thereabove, it will be appreciated that in a zeolite bed having a 36-inch diameter this space indeed is relatively small. Mr. Fritze clearly brought out the fact that they originally filled the casing until there was no space between the top of the zeolite bed and the plate mounted thereabove, but due to the natural shrinkage of the zeolite the inch or inch and a half space had developed. This small space, however, amounts to nothing, and certainly comes within the definition of plaintiff's patent expert, Mr. Waterman, on a locked bed.

Defendant's witness Mr. Eisenhauer stated that in the Duro upflow softener, of which 30,000 had been sold (Trans., 194), there was a two-inch space between the top of the zeolite bed and the perforated screen thereabove, where the bed was at least a 20-inch bed. (Trans., 193.) This comes within Mr. Waterman's definition of a locked bed. The record clearly shows that all of these softeners with a locked bed are operating successfully on a commercial basis.

The record in this case, therefore, is complete upon the succesful operation of a locked zeolite bed, whereas, there has been nothing, or practically nothing, in any of the other litigations on this subject, and it was because of that reason, probably, that the courts held the claims valid, after injecting into said claims the "free and unconfined" feature.

However, Gans did not mention the free and unconfined feature in his patent in suit because he had no right to mention it. It was public property, and fully described in prior printed publications more than two years before the time Gans filed his application in the United States. It will be sufficient to refer to but one prior publication, namely, that of Gans himself, in his

article of April 15, 1909, Defendant's Exhibit 47, wherein, as pointed out earlier in this brief, he clearly describes the very device disclosed in the patent in suit, and moreover, states that there is a space between the top of the zeolite bed and the perforated plate spaced above the bed. And in addition, to show that this is the fact, plaintiff's patent expert Mr. Waterman, testifying about the Gans patent, said that when Gans referred to "backwashing," Gans meant that there was free and unconfined space. If that was what Gans meant in his patent, then he meant the same thing when he mentioned "backwashing" in his article of April 15, 1909.

No matter how one looks at this Gans patent, and no matter how favorably the courts have wanted to construe the claims by reading this and that into them, and by taking the disclaimer into consideration, and, further, by having the plaintiff now asking for an enlargement or broadening of scope of the last element of claim 5 that infringement might be found, claims 1 and 5 can be construed as nothing in the world but a complete mess, worthy of no consideration by any court. Said claims have been treated altogether too liberally until they now mean nothing. There is certainly nothing left to the claims in view of the art as it is before this court. The prior publications and prior patents have a new meaning in this case because of the testimony in this case. As a matter of fact, some of the art in this case was not before any of the other courts. The conclusion is inevitable that claims 1 and 5 are not infringed, and they most certainly are invalid.

XXVIII.

STATUTORY REQUIREMENTS AND COURT DECISIONS RE CLEARNESS AND CONCISENESS OF SPECIFICATION AND CLAIMS. THE CLAIMS ARE CLEARLY INVALID BECAUSE THEY CANNOT STAND THE TEST.

This court has repeatedly held, to say nothing of the requirements of the Statutes, that the invention or important feature of the invention must be clearly and concisely defined not only in the specification but also in the claims.

As this court said through Mr. Justice McReynolds, in the recent case of *American Fruit Growers, Inc.* v. *Brogdex Company* (March 2, 1931) 51 Sup. Ct. 328:

> "The claim of a patent must always be explained by and read in connection with the specification. *Carnegie Steel Co.* v. *Cambria Iron Co.*, 185 U. S. 403, 432."

This court in the *Incandescent Lamp case*, reported 159 U. S. 465, at 475, stated:

> "It is required by Rev. Stat. Sec. 4888 that the application shall contain a written description of the device 'and of the manner and process of making, constructing, compounding, and using it in such full, clear, concise, and exact terms as to enable any person, skilled in the art or science to which it appertains or with which it is most nearly connected, to make, construct, compound, and use the same.' The object of this is to apprise the public of what the patentee claims as his own, the courts of what they are called upon to construe, and competing manufacturers and dealers of exactly what they are bound to avoid. *Grant* v. *Raymond*, 6 Pet. 218, 247. If the description be so vague and uncertain that no one can tell, except by independent experiments, how to construct the patented device, the patent is void.
>
> It was said by Mr. Chief Justice Taney in *Wood*

v. *Underhill*, 5 How. 1, 5, with respect to a patented compound for the purpose of making brick or tile, which did not give the relative proportions of the different ingredients: 'But when the specification of a new composition of matter gives only the names of the substances which are to be mixed together, without stating any relative proportion, undoubtedly it would be the duty of the court to declare the patent void. And the same rule would prevail where it was apparent that the proportions were stated ambiguously and vaguely. For in such cases it would be evident, on the face of the specification, that no one could use the invention without first ascertaining, by experiment, the exact proportion of the different ingredients required to produce the result intended to be obtained. * * * And if, from the nature and character of the ingredients to be used, they are not susceptible of such exact description, the inventor is not entitled to a patent.'

So in *Tyler* v. *Boston*, 7 Wall. 327, 330, wherein the plaintiff professed to have discovered a combination of fusel oil with the mineral and earthy oils, constituting a burning fluid the patentee stated that the exact quantity of fusel oil which is necessary to produce the most desirable compound, must be determined by experiment. And the court observed: 'Where a patent is claimed for such a discovery it should state the component parts of the new manufacture claimed with clearness and precision, and not leave a person attempting to use the discovery to find it out "by experiment." ' "

See also *Howard* v. *Detroit Stove Works*, 150 U. S. 164, at 167:

"* * * The appellants lay particular stress upon the fact that the width of the flange in the Beckwith patent—which was to serve the primary purpose of permitting a bank of ashes to form upon it which would have the effect of preventing the lower part of the firebox from becoming unduly heated—is greater than shown in the previous patents; but neither in the specification nor claim of the patent does the patentee indicate what shall be the width of this flange. The description of the invention is

vague and indefinite, and is not sufficient to enable those skilled in the art to construct it without experiment so as to attain the desired result. The width of the flange is a mere matter of degree, and if at the time of the invention the proper width of the flange to accomplish the purpose desired was known, then the patentee made no invention. If the proper width was not known at that time, it should have been described in the patent; but as the patent is silent on this point, except that the drawings indicate that the width of the outside rim of the grate is the proper width for the flange, it can hardly be said under such circumstances that the vague and indefinite description of the width of the flange elevates it to the dignity of invention, * * *"

Attention is also directed to *Holland Furniture Co.* v. *Perkins Glue Co.*, 277 U. S. 245, at 257, wherein it is stated:

"Revised Stat., § 4888, requires that the patent shall contain a description of the invention 'and of the manner and process of making, constructing, compounding, and using it, in such full, clear, concise, and exact terms to to enable any person skilled in the art or science to which it appertains, or with which it is most nearly connected, to make, construct, compound, and use the same.' One attempting to use or avoid the use of Perkins' discovery as so claimed and described functionally could do so only after elaborate experimentation. Respondents say that laboratory tests would be insufficient and that 'the best and probably the only satisfactory test is to try it out on a large scale in a furniture or veneering gluing factory.' A claim so broad, if allowed, would operate to enable the inventor who has discovered that a defined type of starch answers the required purpose to exclude others from all other types of starch and so foreclose efforts to discover other and better types. The patent monopoly would thus be extended beyond the discovery and would discourage rather than promote invention. *The Incandescent Lamp Patent, supra*, 476. That the patentee may not by claiming a patent on the result or function of a machine extend his patent to devices

or mechanisms not described in the patent is well understood. *O'Reilly* v. *Morse*, 15 How. 62, 112, 113; *Knapp* v. *Morss*, 150 U. S. 221, 228; *Electric Signal Co.* v. *Hall Signal Co.*, 114 U. S. 87; *Westinghouse* v. *Boyden Power Brake Co.*, 170 U. S. 537; *Mitchell* v. *Tilghman*, 19 Wall. 287; *Fuller* v. *Yentzer*, 94 U. S. 288; *Risdon Iron & Locomotive Works* v. *Medart*, 158 U. S. 68. Respondent argues that this principle, applicable to machine patents, is inapplicable to a patent for the composition of matter which is always a result of a process and concededly is patentable as such, but the attempt to broaden product claims by describing the product exclusively in terms of its use or function is subject to the same vice as is the attempt to describe a patentable device or machine in terms of its function. As a description of the invention it is insufficient and if allowed would extend the monopoly beyond the invention. See *Bene* v. *Jeantet, supra; Cochrane* v. *Badische Anilin & Soda Fabrik*, 111 U. S. 293; *The Incandescent Lamp Patent, supra; Matheson* v. *Campbell*, 78 Fed. 910; *American Adamite Co.* v. *Mesta Machine Co.*, 18 F. (2d) 538."

This court, in *Preston* v. *Manard*, 116 U. S. 763, said:

"The hose-reel, the standard, the brace, the nozzleholder, and their use in combination being all old, the description of the hose-reel in the specification and claim, as a 'reel of large diameter, to allow the water to pass through the hose when partially wound thereon,' is not sufficient to sustain the patent.

The requisite diameter of the reel and its proportion to the size of the hose are not defined in the specification, but are left to be ascertained by experiment or from general knowledge. If the patentee had discovered anything new in the size or proportions of the reel, requisite to allow the water to flow through the hose, he should have described it with such precision as to enable others to construct the apparatus. The fact that water will flow through a hose wound on a reel, if the diameter of the reel is large enough and the curves or angles are not too abrupt, is a matter of common knowledge which no one can appropriate to his own use to the

exclusion of the public. In any view of the case, the specification describes nothing that the patentee is entitled to claim; but only what every one has a right to use without his assistance."

In view of the above decisions, it is clear that claims 1 and 5 are invalid for not meeting the requirements of Section 4888 of the Revised Statutes.

In the case at bar, Judge Evans, speaking for the Seventh Circuit Court of Appeals, 43 Fed. (2d) 898, at 901 said:

"We have looked in vain, in the claims and in the specifications of the Gans patent, for any language which mentions a zeolite bed which is free and unconfined. If the novelty of this invention, as it is now asserted, resides in the free and unconfined bed of zeolites, it is more than passing strange that the inventor should make no reference, either in specifications or in claims, to that which marked his advance over the prior art. Courts are not permitted to read into a claim a limitation of one of the elements which the patentee has not seen fit to impose. For what is not claimed by the patentee belongs to the public.

If there was a suggestion in either specifications or claims that permitted of an inference that a limitation of this element was intended, we might find some basis for supporting the construction for which appellant contends. But there seems to have been a studious avoidance of words of limitation—a designed effort to make the elements as broad as possible which is entirely inconsistent with the now asserted limitations to this element without which validity cannot be recognized."

XXIX.

PLAINTIFF'S ALLEGED COMMERCIAL SUCCESS. THERE IS NO EVIDENCE TO PROVE THAT PLAINTIFF'S COMMERCIAL SUCCESS IS BASED UPON WATER SOFTENERS. THE CONTRARY IS ESTABLISHED AND NOT REBUTTED.

The mere fact that plaintiff, by its very first witness Mr. Tiger, attempted to develop the commercial success of the zeolite water softener by the plaintiff, shows that there is doubt even in the plaintiff's mind as to the validity of the claims in issue, for it is only when there is doubt that such testimony is material.

Mr. Tiger led the trial court to believe, and most certainly led defendant to believe, that the $2,750,000 worth of business done by the plaintiff in 1928 was the direct result of the manufacture and sale of the zeolite type of water softener. (Trans., 23.) However, upon cross-examination (Trans., 89) it was established, through Mr. Tiger, that this business turnover included not only the water softening apparatus, but also the sale of the mineral zeolite; also sand filters; also lime soda water softeners; also carbon-dioxide recording and indicating instruments for use in combustion work; also a continuous blow-off system for boiler plants; and also manganese removal systems.

Accordingly, plaintiff's original testimony on the commercial success was nothing sort of deceptive, and plaintiff made no effort of its own initiative to correct the deception. Furthermore, plaintiff has not attempted to bring out in this record just how much business it has done in the zeolite water softening department. Therefore, its testimony amounts to nothing, in so far as establishing a commercial success, and the court accordingly

is bound to disregard the question of commercial success.

Judge Evans, speaking for the Seventh Circuit Court of Appeals, on the subject of plaintiff's alleged commercial success, stated, 43 Fed. (2d) 898, at 903:

> "Extensive use has also been stressed by counsel as a reason for upholding the patent. That there has been an extensive use of zeolites for water softening purposes must be admitted. Such use strongly evidences outstanding merit in this mineral compound for water softening purposes. We are not, however, impressed with the argument that the extensive use is attributable to the apparatus for holding and regenerating the zeolites. The art was advanced by the discovery of the product,—zeolite in natural and artificial form,—and in the discovery of the water softening qualities of this product, supplemented by the further discovery that such article could be regenerated readily and cheaply. Gans obtained a patent in this country on zeolites and the process for making them. If this patent were assailed and doubt existed as to its validity, the extensive use relied on would strongly support the patent. Bnt we cannot ascribe this extensive use to both the commodity and to the apparatus for its use, when convinced that its actuating cause is to be found in the article only.
>
> The decree is affirmed."

XXX.

THE WITNESSES.

Defendant's witnesses were all high-grade practical men, who had substantially a complete knowledge of their subject and testified directly and frankly.

On the other hand, plaintiff's witnesses, with the exception of Mr. Kriegsheim and Mr. Paige, were not direct and frank in their testimony. They quibbled continu-

ously to avoid damaging admissions, which admissions could not ultimately be avoided. Plaintiff's patent experts had no real practical knowledge of the devices about which they testified and had to rely purely upon theoretical conclusions which they chose and for which they were paid to make in preparation for litigation.

XXXI.

MOTION FOR PRELIMINARY INJUNCTION.

Although the argument before Judge Lindley on plaintiff's motion for preliminary injunction about three years ago was brief, he was quick to see that it was doubtful that claim 5 was infringed by defendant's upflow softener. In the opinion, Judge Lindley stated:

> "Defendant earnestly contends that there is no infringement in the manufacture and sale of its upflow type of softener. The question thus raised is new and close."

Judge Lindley therefore denied the motion for preliminary injunction as to defendant's upflow softener. He was right in that conclusion, and it is submitted that during this trial defendant has proven beyond all doubt that the question of infringement is not even close, but that noninfringement is perfectly clear. Likewise, it is submitted that defendant has proved beyond the shadow of a doubt that not only its upflow softener is not an infringement of claims 1 and 5 but that its 1925 downflow softener does not infringe claim 5 of the Gans patent. The Seventh Circuit Court of Appeals so held. 43 Fed. (2nd) 898 at 903. Likewise, it is submitted that defendant has clearly established that both claims 1 and 5, in spite of any interpretation which they may have been given, are clearly invalid in view of the prior art

publications and patents, some of which have never been before the courts in the prior litigations, and all of which have been given new and more significant meanings in view of the testimony in this case.

The wording of each of the prior art articles and patents is almost identical with the disclosure of the Gans patent. The conclusion is inevitable that the authors of said articles and the patentee Gans had in mind the same process, the same structure, the same results. It is clear that each sought to soften water by the use of an apparatus including a casing containing sodium zeolites by merely passing the water through said zeolites. They each sought to regenerate the zeolites when they became exhausted. They each sought to keep the zeolite bed in a clean condition.

Defendant has established that anyone skilled in the art could follow any one of said prior publications and make a successful zeolite type of water softener. It is submitted that the disclosures of the prior publications are more complete than is the Gans patent in suit.

Defendant has shown conclusively that it could not be ascertained from plaintiff's patent the quantity of zeolite to be used, the rate of flow of water to be softened, the degree of saturation of the sodium salt solution for regeneration, the operative proportions of the various parts, and the connections for backwashing and for the removal of dirt and slime.

Defendant has shown conclusively that the prior art publications taught everything necessary to instruct not only Gans and the defendant but other members of the public to make what is now relied upon by plaintiff as an invention. Defendant has proven that Gans was anticipated by said prior art publications and patents, and that if there is any distinguishing feature between Gans

and the prior art, and if there is any particular in which Gans achieves something heretofore unknown, the defendant has merely followed the teachings of the prior art and does not infringe.

Defendant has shown that claims 1 and 5 are for pure aggregations, particularly if the free and unconfined bed is read into said claims, for the free and unconfined bed and the backwashing of the free and unconfined bed, perform the identical functions in sand filters as in the case in the analogous, yes, the identical, art of zeolite water softeners.

As this court said in *Smith* v. *Nichols,* 21 Wall. 112 at 119:

> "But a mere carrying forward or new or more extended application of the original thought, a change only in form, proportions, or degree, the substitution of equivalents, doing substantially the same thing in the same way by substantially the same means with better results, is not such invention as will sustain a patent."

Again, quoting this court:

> "* * * a proper test of the validity of a patent is in the application of the rule that what would infringe, if later, is anticipation, if earlier." *Knapp* v. *Morss,* (1893) 14 S. Ct. 8 L., 150 U. S. 221, 37 L. Ed. 1059; *Peters* v. *Active Mfg. Co.* (C. C. 1884) 21 F. 319.

Defendant has shown clearly that claim 5 reads upon the Rundschau device. Plaintiff, if the Rundschau device were later, would certainly allege infringement of claim 5 by that device. The Rundschau article however is earlier; therefore, claim 5 is anticipated thereby.

Defendant has shown conclusively that the Rundschau device among others not only operated perfectly from an efficient commercial point of view, but operates more

efficiently than the downflow type of zeolite water softener covered by the Gans patent in suit. The device of the Rundschau article in a six months' test prior to the trial, proved beyond all doubt the commercial success of that device for doing practical work in its ordinary use.

Anticipation therefore is clearly established.

XXXII.

COMITY.

Defendant appreciates the fact that the Gans patent has been litigated in the Second and Sixth Circuits, and that the Courts of Appeals of those Circuits have held claims 1 and 5 of the Gans patent valid. But it is well established by this court, *Mast et al.* v. *Stover Mfg. Co.*, 177 U. S. 485 at 488, that comity is not a rule of law but one of practice, convenience, and expediency. However, comity recognizes the fact that the primary duty of every court is to dispose of cases according to the law and the facts; in a word, to decide them right. In so doing, the judge is bound to determine them according to his own convictions.

The case at bar sets forth facts which are entirely different from those of the prior litigations involving the Gans patent, and, accordingly, this court will dispose of the case according to the law and facts in this case.

XXXIII.

CONCLUSION.

In conclusion it is submitted that in view of the above, claims 1 and 5 of the Gans patent should be held invalid

and not infringed, and that the decision of the Seventh Circuit Court of Appeals should be affirmed.

Respectfully,

GEORGE L. WILKINSON,
CHARLES L. BYRON,
Counsel for Defendant.

Chicago, Illinois,
April ....., 1931.

XXXIV.

APPENDIX A.

A GEBRAUCHMUSTER IS A PATENT.

With reference to the Gebrauchmuster discussed in this brief, the plaintiff urges that it cannot be considered as part of the prior art because it is not a printed publication, and is not a patent under R. S. 4886. That it is not a printed publication is clear, although the descriptive title of the Gebrauchsmuster No. 313,671, "Filter for Removing the Lime from Boiler Feed Water consisting of a box of permutit (zeolith) filler enclosed between layers of gravel and regenerating device," and Gebrauchsmuster No. 341,512, "Soft Water Filter with Cross-shaped Sprinkler, and Attachable Filtering Bag," contained in the Patentblatt, are, of course, printed publications, and are in themselves disclosures of zeolite water softeners. It is equally clear that a Gebrauchsmuster, although unprinted, is a "patent."

The Standard Dictionary defines a patent as:

> "A government grant to an inventor, securing to him for a limited time the exclusive privilege of making, using or vending, and of authorizing others to make, use or vend, any new and useful machine, manufacture or process, or composition of matter, or any new and useful improvement thereof."

The A. and E. Encyclopedia of Law gives this definition:

> "A patent is a grant by the state of the exclusive privilege of making, using, and vending, and of authorizing others to make, use and vend the subject matter of an invention."

In *Societe Anonyme, etc.* v. *General Electric Co.* 97 Fed. 604 (C. C. S. D. N. Y.), the court said:

> "A patent implies a grant from the sovereign

power securing to the inventor, for a limited time, the exclusive right to make, use and vend the invention; it conveys to the inventor substantive rights and secures to him a valuable monopoly which he can enforce for his own advantage either by using it himself or by conveying the privilege to others."

A Gebrauchsmuster comes squarely within each of these definitions.

As explained by Langner, Defendant's Exhibit No. 23, although a Gebrauchsmuster or "petty patent," generally covers subject matter of a lower order of invention than a "main patent" in Germany and is limited to useful devices (not covering processes) and although Gebrauchsmuster applications are treated in the patent office like all patent applications in France, *i. e.*, are not examined as to novelty, and although only a descriptive title of the Gebrauchsmuster is printed, instead of the entire specification and drawing, still the only purpose and the only effect of a Gebrauchsmuster is to give to its registrant the exclusive right to make, use and sell the device disclosed in it. In this connection the following parallel columns giving the corresponding provisions of the German main patent law and the Gebrauchsmuster law, relating to the privileges granted, and the remedies provided for infringing, are of interest:

Main Patent Law.	Gebrauchsmuster Law.
Sec. 4. The patent has the effect that the owner thereof has the exclusive right of manufacturing the object of the invention industrially, bringing it into use, vending or using the same. If the patent be for a process, the right extends to the products directly manufactured by the process.	Sec. 4. The registration of a useful model* according to the tenor of section 1 gives the registered applicant the exclusive right of reproducing the model for trade purposes, of introducing on to the market, of displaying or using the implements and articles thus produced. Rights, based on a subsequent application, may not in so far as they infringe rights based on a prior application, be carried into effect without the permission of the registered owner of the latter. If the

* A "useful model" means a "device or an article, an appliance, an instrument, a small machine." (Rec. 375, XQ. 33.)

SEC. 35. Whoever knowingly or by gross negligence makes use of an invention contrary to the regulations of sections 4 and 5 is liable to pay damages to the injured party.

If the invention in question relate to a process for the production of a new substance, all substances of a like nature shall be considered as having been made by a patented process, until proof to the contrary be given.

SEC. 36. Whoever knowingly makes use of an invention against the regulations of sections 4 and 5 shall be punished by a fine not exceeding five thousand marks, or by imprisonment not exceeding one year.

The penal proceedings shall only be instituted on application. This application may be withdrawn.

If punishment be awarded, the injured party shall be authorized to publish the sentence at the cost of the defendant. The mode of publication and the time within which it must be effected shall be determined in the sentence.

SEC. 37. In place of the damages awarded according to this law, the court may, at the request of the plaintiff, award, in addition to the fine or punishment, a penalty not exceeding ten thousand marks to be paid to him. For this penalty all the defendants are liable as joint debtors.

The award of such penalty shall prevent any further action for damages being instituted.

SEC. 38. In a civil suit in which the plaintiff or defendant advances a claim based on the provisions of this law, the action shall be referred to the Imperial Court for trial and final decision according to section 8 of the regulations of the "Gerichts-Verfassungs-Gesetz."

essential contents of the registration are taken, without consent, from the descriptions, drawings, models, implements or arrangements of another person, the protection based on this act shall not affect the injured party.

SEC. 9. Whoever wittingly or through culpable negligence makes use of a useful model in contravention of the provisions of the sections 4 and 5 is liable for damages to the injured party. Suits concerning infringement of the right of protection become superannuated in three years in consideration of each and every act on which the same is based.

SEC. 10. Whoever wittingly makes use of a useful model in contravention of the provisions of sections 4 and 5 is liable to a fine not exceeding 5,000 marks (£250) or to one year's imprisonment. The prosecution is initiated only on application. The withdrawal of the application is permissible. On the passing of judgment the right to publish the same at the cost of the condemned party is to be immediately awarded to the injured party. The mode of the publication as well as the period for the same is to be determined in the judgment.

SEC. 11. Besides the punishment, a penalty up to 10,000 marks (£500) and payable to the injured party may be fixed, on the application of the latter, in place of all compensation arising out of this law. For this penalty the condemned parties are responsible as joint debtors. A penalty thus fixed excludes the validity of all further claim to compensation.

SEC. 12. In civil suits, in which by plaint or counter-plea a claim is made founded on the provisions of this law, the action and decision for final judgment shall be carried to the imperial court in accordance with section 8 of the preamble to the law of legal constitution.

Although a Gebrauchsmuster is not printed, Section 3 of the Act provides:

"SEC. 3. If the application answers to the requirements of section 2 the patent office decrees the

registration in the records for useful models. The registration must include the name and residence of the applicant as well as the time of application. The registrations are to be published at definite dates in the Imperial Gazette. Changes of ownership will on application be noted on the register. The examination of the register, as well as of the applications by reason of which the registrations were made, is free to everybody."

Thus anyone examining the Patentblatt in question and finding, for example, that Gebrauchsmuster Nos. 313,671 and 341,512 had been registered for or under the titles quoted in the first paragraph of this appendix, could immediately go, or send some one, to the German Patent Office, and there inspect, and make copies of, the complete specification and drawing of that Gebrauchsmuster.

A Gebrauchsmuster is not to be confused with a design patent. Design patents are the subject of an entirely different law in Germany known as the Geschmackmuster law. (Defendant's Exhibit No. 23.)

In this country we have but one kind of mechanical patents. An abstruse invention in chemistry, or metallurgy, or radio, receives the same kind of a patent as an improved safety pin or zeolite water softener. In Germany there are two different kinds of patents for invention of different kinds. Sometimes, as Langner explained (Defendant's Exhibit No. 23), it is difficult to determine in advance whether a given invention is of the more important character for which "main patents" are granted or whether it should be made the subject of a Gebrauchsmuster application. Under such circumstances it is customary to apply for a "main patent" and an eventual Gebrauchsmuster, meaning that if the main patent is refused a Gebrauchsmuster is requested. Of course, the "main patent" is more desirable because of

its longer term. But the practice of applying for both, in the alternative, for the same invention emphasizes the similarity of subject matter which may be covered by these two different kinds of patents.

The United States Patent Office holds that a Gebrauchsmuster is a patent, under R. S. 4886 (*Sexton* v. *Reis*, Interference No. 37,770, decision by the Board of Examiners-in-Chief, Appeal No. 8405, June 26, 1915; affirmed by the Commissioner of Patents, April 7, 1916). Also in the leading case upon the point, *Safety Gas Lighter Co.* v. *Fischer Bros. & Corwin*, 236 Fed. 955 (D. C. N. J.), Judge Haight holds that it is a patent. In that case, which was affirmed by the Court of Appeals of that Circuit (247 Fed. 1005), in a short opinion which virtually adopted Judge Haight's thought without specific mention of this particular point, Judge Haight said:

"It is contended by the plaintiff, on the authority of *Steiner* v. *Schwartz*, 148 Fed. 868 (C. C. S. D. N. Y.), that a German Gebrauchsmuster is not a patent, within the meaning of section 4886 of the Revised Statutes (Comp. St. 1913, Sec. 9430), and hence that the two Gebrauchsmusters before referred to have no effect on this case. Although it is with extreme hesitation that I venture to express a view contrary to that entertained by so distinguished a jurist as Judge Holt, I am unable in view of the evidence in this case and in the light of the recent decision of the Circuit Court of Appeals of the Second Circuit in *Sirocco Engineering Co.* v. *Sturtevant Co.* 220 Fed. 137, 143, 136 C. C. A. 91, to concur in his view. In the latter case it was held that all that the statute requires is that the device be patented in a foreign country, that it is patented there the moment it is sealed or enrolled, that whether or not it is printed is immaterial, and that it is enough that the officials have acted upon the application and granted the patent. It would also seem to me immaterial in what form it is issued, providing the specifications and drawings are accessible to the public. See *Ireson* v. *Pierce*, 39 Fed. 795, 798 (C. C. D.

Mass.) and *Elizabeth* v. *Pavement Co.* 97 U. S. 126, 131, 24 L. Ed. 1000.

The rights conferred on an inventor by a German Gebrauchsmuster, except as to time, seem to be quite as extensive as those guaranteed by a patent in this country. Its grant is the act of the government. Although only the title is published, in the sense that it is printed in an official publication, the specifications and drawings of the patent are open and accessible to the public, as are also the claims, which measure the scope of the protection afforded to the inventor, as soon as the title, date of application, and registration are published in the Patentblatt. As it is not essential that a foreign patent, to have the effect mentioned in section 4886 of the Revised Statutes, should be printed, but that the act of the officials in granting it and accessibility of its disclosures to the public are the decisive factors, I am at a loss to understand how the fact that only a title is printed, or how the scope of the invention which it protects, or that the examination made in the Patent Office before it is granted is limited, can have any effect on it under our laws. If these patents are considered, as I think they should be, as in the prior art, the Pomeroy patent in suit, if not anticipated by them, or void for lack of invention over them, must be given such a narrow construction that I think the defendant's device does not infringe."

This same question arose before the Court of Appeals of the Sixth Circuit, where apparently there was nothing in the record as to the true nature of a Gebrauchsmuster, and that court held, *Permutit Co.* v. *Wadham,* 13 Fed. (2d) 454, 458:

"Several Gebrauchsmuster are relied upon. Clearly these are not publications. That they are 'patents' at all has been denied (*Steiner* v. *Schwartz,* Holt, D. J. (C. C.) 148 F. 868, 870); but, if they are, their anticipatory effect is confined to the claim, for that is the thing 'patented' (*Leeds* v. *Victor,* 213 U. S. 301, 315, 318, 29 S. Ct. 495, 53 L. Ed. 805; *Commercial* v. *Acetylene* (C. C. A. 6) 192 F. 321, 112 C. C. A. 573); and the Gans patented invention is not covered by any Gebrauchsmuster claim."

Upon rehearing, 15 Fed. (2d) 20, 21, it went into the matter more fully as follows:

> "It is true that in the case of *Safety Co.* v. *Fischer* (D. C.) 236 F. 955, 961, Judge Haight expressed the opinion that the Gebrauchsmuster were patents, but the decision went off in part on another line, and the affirmance (C. C. A. 247 F. 105) did not specifically involve this question. It would seem that the words 'patented in any foreign country' would have indicated to Senators and Representatives, familiar with the English and United States systems, inventions for which letters patent had been granted by some foreign government. With Gebrauchsmuster there is no official grant of anything. In effect they much resemble our copyrights; the 'title' is 'registered,' and that is all; they are in the German system always distinguished from patents, as if somebody else. However that may be, the language of sections 4920 and 4887 (Comp. St. Secs. 9466, 9431) is the same in this particular; both refer to the effect of a foreign patent; and the holding of the *Leeds & Catlin Case*, 213 U. S. 301, 29 S. Ct. 495, 53 L. Ed. 805, has the effect to interpret section 4920 as well as section 4887; nothing is patented, except what is claimed. Further, and in any event, the description in these Gebrauchsmuster fall far short of that clear and definite disclosure of the precise invention now involved, which would be required, even if they were publications, to give them anticipatory effect."

It will be noted that in spite of the court's view that only the thing claimed in a Gebrauchsmuster can be considered to be "patented," it stated that that particular Gebrauchsmuster failed to disclose the invention of the patent in suit.

It is interesting to note what plaintiff says in its brief at page 72 on this same point:

> "The grant or monopoly given is not for that which may be described but for that which the claim sets forth, the description serving only to interpret the claim."

By the same token Gans claims 1 and 5 are invalid even as viewed by the Second and Sixth Circuit Courts of Appeals, unless the free and unconfined zeolite bed is read into said claims.

Subsequent to these decisions of the Sixth Circuit Court of Appeals, the same Gebrauchsmuster was before the Court of Appeals of the Second Circuit in *Permutit Co.* v. *Paige & Jones Chemical Co.* 22 Fed. (2d) 916 on appeal from an order granting a preliminary injunction. The same question of whether a Gebrauchsmuster was a "patent" was argued in the briefs, but the court nevertheless treated the Gebrauchsmuster as available to the defendant, saying (p. 918):

> "It is apparent that the German inventor did not have regeneration and backwashing in mind. The German Gebrauchsmuster did not anticipate what this inventor had in mind in claim 5. See *Milburn Co.* v. *Davis,* 270 U. S. 390, 46 S. Ct. 324, 70 L. Ed. 651; *Leeds & Catlin* v. *Victor Talking Machine Co.* 213 U. S. 325, 29 S. Ct. 503, 53 L. Ed. 816."

In *American Chain Co. Inc.* v. *Bethlehem Bumper Corp.* 25 Fed. (2d) 759, the Gebrauchsmuster was offered by the defendant over the plaintiff's objection that it was not a "patent." Nevertheless the court considered it on its merits in its decision.

The plaintiff seems to argue that the fact that no formal grant is issued to the registrant of a Gebrauchsmuster prevents it from being a "patent." Whether or not a formal grant with a red seal on it is delivered to the registrant is wholly unimportant. The important thing is that the registrant actually receives from the Government the exclusive privileges above referred to. As section 4 of the Gebrauchsmuster Act states, it is the very "registration" of the Gebrauchsmuster that "gives the registered applicant the exclusive right * * *", described.

It is submitted that Judge Haight was right in holding that a Gebrauchsmuster is a patent. The Langner testimony in this case upon this point fully justifies a similar holding here. Furthermore the entire disclosure of the Gebrauchsmuster is available as having anticipatory value. Such is so held also by Judge Lindley in the case at bar. (Trans., 564.) The Circuit Court of Appeals of Seventh Circuit eliminated the two Gebrauchsmusters from consideration of the case, although it was not satisfied that Gebrauchsmuster came within the provisions of Section 31, Title 35, U. S. C. A.

XXXV.

APPENDIX B.

FINDINGS OF FACT QUOTED FROM TRIAL JUDGE LINDLEY'S OPINION.

Re Gans Article of April 15, 1909:

> "Appreciating that the proper translation is a question of fact, I am of the opinion, after a careful perusal of all of the direct and cross-examination of the translators that defendant's translation is more nearly consistent with the original meaning of the German words used than that of the plaintiff." (Trans., 559.) 37 Fed. (2nd) 385, 387.
>
> "The cross-examination of the translators who testified for plaintiff weakens the force of their direct testimony. I am of the opinion that at that time, in 1909, Gans was describing a body of zeolites which was free and unconfined." (Trans., 559.) 37 Fed. (2nd) 385, 387.
>
> "Thus the plaintiff has furnished testimony to the effect that in the latter part of 1907 or the early part of 1908 Gans became convinced by the demonstrated operation of the device that the excelsior should be removed and a free space substituted therefor and then eliminated the excelsior and supplanted the

same with a free space." (Trans., 559.) 37 Fed. (2nd) 385, 388.

"The conclusion is unavoidable that Gans in April, 1909, intended to describe and did describe a filter with the essential elements of his later application and one containing the now alleged implied essential element of a free and unconfined space above the zeolites." (Trans., 560.) 37 Fed. (2nd) 385, 388.

"He disclosed a water softener apparatus composed of a casing, a filter bed of sand, a layer of zeolites disposed thereon, means for permitting the passage of water through the casing, means of cutting off the supply of water on the exhaustion of zeolites, the suggestion of regeneration to be accomplished by washing off the zeolites with a salt solution and of backwashing for rinsing." (Trans., 560.) 37 Fed. (2nd) 385, 388.

Re Gans Article of April 15, 1909:

"This is of importance. Plaintiff now insists that claim 1 comprises as one essential element a free and unconfined bed of zeolites, and supports the assertion by the testimony of its expert, who after admitting that in neither the claims nor description of Gans' patent is there any statement about a free and unconfined zeolite bed, said that Gans must have contemplated a free and open bed because in the description he speaks of 'backwashing,' and that the conclusion that it is essential that the bed of zeolites be free is implied from Gans' use of the word 'backwashing,' for the reason, as the witness claims, that there cannot be proper backwashing of a locked bed. In his article Gans uses the word backwashing obviously with the same meaning, and if it is necessarily a conclusion that the word 'backwashing' in the patent presupposes a free bed of zeolites, then it is equally true that the use of the word backwashing in the article presupposes the same kind of a bed. Thus, on the theory of plaintiff's expert, it is evident that Gans in 1909 was describing a filter with a free bed of zeolites, thus corroborating the testimony of plaintiff, that as early as the latter part of 1907, or the early part of 1908 Gans had realized that

excelsior would not do, and was building before 1909 an apparatus which had a free bed." (Trans., 560.) 37 Fed. (2nd) 385, 388.

Upflow softeners of greater utility than downflow softeners.

"Later the Court of Appeals in *Permutit Co.* v. *Wadham*, 13 Fed. (2d) 454, in holding that claim 1 was valid said: 'Nor does it follow that * * * there is no patentable distinction between the downflow and the upflow. The former works satisfactorily, and it seems probable, if not certain, that the latter would not. The reason why one will and the other will not shows that this difference is one of those which are not so simple as they seem.' Obviously the Court was of the opinion, drawn from the evidence before it, that the upward flow softener would not work and that, therefore, the reference to an upward flow softener was not pertinent. The evidence in the instant case is conclusive to the effect that upward flow softeners are in fact of greater utility and efficiency than downward flow softeners." (Trans., 561.) 37 Fed. (2nd) 385, 389.

Re Gebrauchsmuster No. 313,671, *June* 27, 1907:

"Apparently each of the elements named in claim 1 are presented in this description, with the exception of the alleged implied essential that the bed of zeolites shall be unconfined." (Trans., 563.) 37 Fed. (2nd) 385, 389.

Re Gebrauchsmuster No. 341,512, *May* 30, 1908:

"Gebrauchsmuster 341,512, May 30, 1908, by Newman, claimed a soft water filter for domestic purposes comprising different elements, consisting of a tank in which had been placed zeolites, and a sprinkler entering below the level of the hard water, distributing the water into the filter. The water flowed through the entering pipe, passed through the zeolites and ran off in a softened state at the bottom. The top of the casing and the bed of zeolites were open, and the zeolites were regenerated by being

flushed with a common salt solution. The drain pipe was at the lowest point of the casing. Backwashing could be accomplished by connecting a water supply to the outlet at the bottom of the tank." (Trans., 563.) 37 Fed. (2nd) 385, 389.

Gebrauchsmuster a patent.

"I have examined the German laws as to patents and Gebrauchsmuster, and it is apparent that the same monopoly is granted under the Gebrauchsmuster law as under the Patent Law, but that it is more limited in time. The German laws provide for registry of designs under the Geschmackmuster law, for useful models under the Gebrauchsmuster law and for other inventions under the Patent law." (Trans., 564.) 37 Fed. (2nd) 385, 390.

Leister German patent No. 211,064 *January* 23, 1908:

"He expressly states, however, that the beds are separated from each other by spaces, and the drawings indicate free spaces above both the gravel and the zeolite beds." (Trans., 565.) 37 Fed. (2nd) 385, 390.

Weiss Thesis, June 3, 1910:

"Defendant presents a thesis by one Weiss published June 3, 1910, less than two years prior to the filing date of the Gans patent, but earlier than any date established by plaintiff of its introduction of its alleged invention into this country." (Trans., 565.) 37 Fed. (2nd) 385, 390.

Runschau Article of January 27, 1909:

"The article discloses that the exhausted zeolites were regenerated by a salt solution supplied through a pipe controlled by a valve, passing downwardly through the zeolites. The salt solution apparently passed out through the pipe attached at the lowest point of the casing. The filter was washed out with water passed upward through the filter. Plaintiff raises a question as to whether the draining of the salt solution is from the lowest point of the casing." (Trans., 565.) 37 Fed. (2nd) 385, 391.

Rundschau device built by Defendant:

"After considering all of the evidence the Court is of the opinion that the construction in question was in substantial accordance with the disclosure of the Rundschau article." (Trans., 566.) 37 Fed. (2nd) 385, 391.

Foreign publications:

"The reasons ordinarily urged against foreign teachings do not find the usual basis here, for the applicant resided in Germany; the publications were published there, some by himself, some by his associates, some by scientists like himself. It was in America that he applied for a patent, upon claims never submitted to his own government, to a patent office obviously without notice of these German publications. He assigned his application, and eventually it came to the plaintiff, some of the officers of which were associated with him in Germany. Yet we do not have his story of his experiences." (Trans., 567.) 37 Fed. (2nd) 385, 391.

What Art taught Gans:

"What had the art taught Gans when he filed his application? His own patents on zeolites and his article of April 15, 1909 demonstrate that he had learned how to make zeolites, what their properties were, and how to make a softening apparatus. He had the benefit of Feldhoff's teaching of 1907, of the Technische Rundschau article in January 1909 and of the Weiss Thesis early in 1910. He knew what Leister had patented; he knew the titles of the two German Gebrauchsmuster, registered and published to the world. He knew everything reasonably to be drawn from the prior art as hereinbefore set forth, and that, it seems apparent to the court, furnished everything that any one skilled in the art would need in order to perfect the apparatus produced." (Trans., 567.) 37 Fed. (2nd) 385, 391.

Apparatus and Zeolites not new:

"Neither the idea of the container nor that of a bed of zeolites was new. Others had produced a softening apparatus with a layer of sand and on top of it a layer of zeolites. There were many filtering devices containing means for the passage of water through the casing; for cutting off the supply of the water and for passing through the casing regenerating solution." (Trans., 567.) 37 Fed. (2nd) 385, 392.

Alleged patentable features:

"Indeed plaintiff's asserted patentability of the claims is ultimately confined to the element that the unconfined bed of zeolites in a downward flowing softener shall be free and unconfined, and upon claim 5 to the same in upward flowing types also and the additional element of attaching the drain for the salt solution at the lowest point of the casing. Only these elements are left to save plaintiff's claim of invention." (Trans., 567.) 37 Fed. (2nd) 385, 392.

No basis in Specification or claims for "Free and Unconfined Bed."

"To say the claims include as an essential requirement that the bed shall be unconfined is to read into the claim something that is not stated in specifications, description or claim, but which defendant insists must be implied because of the so-called stirring apparatus, which is never used, and the statement as to backwashing." (Trans., 567.) 37 Fed. (2nd) 385, 392.

"Obviously neither implication is necessary or logical. Backwashing, under the evidence, may be accomplished whether there be an unconfined bed or not, though it may not be so efficient in a confined bed. Furthermore, the stirring apparatus can be used in a confined bed, it being necessary therewith simply to run the pinion upon which the stirring apparatus turns, through the cover confining the zeolites, and attach thereto, below the cover, the stirring blades." (Trans., 567.) 37 Fed. (2nd) 385, 392.

Free and Unconfined Bed. Gans knew of same in 1907 *and* 1908 *and is bound thereby.*

"Furthermore, the testimony of the plaintiff's president and the language of the prior publications is such that Gans was bound to know and did know as early as the latter part of 1907 or the early part of 1908 that some of the people skilled in the art believed that the body of zeolites should be free and unconfined, and that he himself made a device with such a bed more than two years prior to the filing of his application." (Trans., 568.) 37 Fed. (2nd) 385, 392.

Prior Art taught Gans Everything in his patent in suit.

"Gans knew the properties of zeolites; he knew that in order to function they must be charged with salt and when exhausted, recharged; that mechanical filters were desirable to eliminate the physical impurities of water, and that after regeneration the container and its contents should be rinsed of excess salt. He knew that the nature of any material like zeolites or sand is such that in order that they may be thoroughly cleansed the granules should, as nearly as possible, be in suspension, exposing all their sides to the liquid in which they are bathed. He knew that if he wanted to wash sand he could best do so when it is an uncompacted or suspended mass, and that the same was true of zeolites. It was therefore obviously necessary that to get complete submersion he must leave the upper part of the zeolites to a certain extent at least unconfined. He knew further that in order to secure lack of compactness or suspension, there must be some free space above the body of zeolites furnishing room for expansion when flooded with water." (Trans., 568.) 37 Fed. (2nd) 385, 392.

Sand Filter and Zeolite Softener Analogous Arts.

"Remembering the comments of the patent office upon the Bommarius patents, observing that the defendant at the present time manufactures sand filters of the same structure as zeolite softeners, it

seems clear that there was no invention in either claim because of the substitution of zeolites." (Trans., 569.) 37 Fed. (2nd) 385, 393.

It is well recognized that findings of fact of a trial court based upon the testimony of witnesses given in open court will not be disturbed by an appellate court.

One of the leading authorities emphasizing and reiterating this rule is the decision of this court in *Adamson* v. *Gilliland*, 242 U. S. 350, 353, from which the following quotation is made:

> "* * * so far as the finding of the Master or judge who saw the witnesses 'depends upon conflicting testimony, or upon the credibility of witnesses, or so far as there is any testimony consistent with the finding, it must be treated as unassailable.' "

XXXVI.

APPENDIX C.

CONCLUSIONS OF LAW STATED IN JUDGE LINDLEY'S OPINION.

Claims cover only filtering device.

> "The claims here under consideration do not cover the idea of softening water by means of zeolites, the regeneration of said zeolites, or the rinsing thereof by backwashing. They cover only a filtering device for making use of zeolites in such manner as to utilize their known functions in softening water." (Trans., 556.) 37 Fed. (2nd) 385, 386.

Test of validity.

> "If the claims do not necessarily imply a free or open bed of zeolites as contrasted with 'a locked bed,' or, if the inclusion of such implied element in the combination did not bring about invention claim 1 fails, and if in addition the element of attachment of the drain for salt water at the lowest point was

not invention, claim 5 fails." (Trans., 558.) 37 Fed. (2nd) 385, 387.

Foreign patent does not have to be printed.

"As it is ont essential that a foreign patent, to have the effect mentioned in section 4886 of the Revised Statutes, should be printed, but that the act of the officials in granting it and accessibility of its disclosures to the public are the decisive factors, I am at a loss to understand how the fact that only a title is printed, or how the scope of the invention which it protects, or that the examination made in the Patent Office before it is granted is limited, can have any effect on it under our laws." (Trans., 564). 37 Fed. (2nd) 385, 390.

Gans bound by teachings of prior art:

"But Gans was bound by the teachings of the prior art, and the question arises whether, with those teachings in mind, he exercised merely the mechanical skill of one learned in his profession, or achieved invention." (Trans., 566.) 37 Fed. (2nd) 385, 391.

Free and unconfined bed:

"Obviously neither implication is necessary or logical." (Trans., 567.) 37 Fed. (2nd) 385, 392.

Free and unconfined bed:

"I am of the opinion that there is no warrant for reading into claim 1 any requirement that the bed of zeolites shall be free, but, as stated, if that element is necessarily implied, it likewise is imported in the prior art, as shown by Gans' own publication, for, if backwashing in the patent implies a free bed, so backwashing in his early article, dealing with the same subject matter, must import the same conclusion." (Trans., 568.) 37 Fed. (2nd) 385, 392.

"Then too, I am not willing to say, even if some may believe that the idea of a free bed of zeolites were not in the prior art, that the addition of the same to the combination amounted to invention." (Trans., 568.) 37 Fed. (2nd) 385, 392.

Free and unconfined bed, No Invention:

"I do not believe that even though we read into these claims an unexpressed intention on the part of Gans that the body of zeolites should be open, and even though the idea of a free space was not old, the result amounted to anything more than the natural and obvious method of meeting the problem by one skilled in the art." (Trans., 569.) 37 Fed. (2nd) 385, 392.

Lowest Point Drainage, No Invention:

"As to claim 5 we have even a more weak assertion as to one element,—means for removing the salt connected to the lowest point of the container. It was the addition of that element only that procured the allowance of the claim. Was this invention? Suppose we have before us an apparatus as claimed in claim 5 without this last element? What is the easy, natural and obvious manner in which to drain the salt solution, which, following the course of gravitation goes to the bottom of the casing? A school boy would reply that the obvious manner is to put a plug and tap at the lowest point." (Trans., 569.) 37 Fed. (2nd) 385, 392.

No Invention:

"A multiplicity of elements may be added indefinitely without creating a patentable combination, unless by their collocation a new result is produced. The adding of a plug and connecting the same to a waste pipe, in order to drain off the solution of salt from Gans' container was merely solving the problem of a plumber." (Trans., 569.) 37 Fed. (2nd) 385, 393.

No Invention in substituting Zeolites for sand in filter:

"* * * observing that the defendant at the present time manufactures sand filters of the same structure as zeolite softeners, it seems clear that there was no invention in either claim because of the substitution of zeolites." (Trans., 569.) 37 Fed. (2nd) 385, 393.

"True it is that the process of softening involves a chemical change as the water passes through the zeolites, whereas the purification of water through sand involves only the removal of physical impurities, yet the mere substitution of the zeolites for sand is not invention, in view of the fact that zeolites themselves were previously patented by Gans." (Trans., 569.)

"He undoubtedly accomplished invention in those patents, but when he merely adapted the sand filter construction to the use of zeolites by substituting the latter for sand he did not accomplish invention." (Trans., 570.) 37 Fed. (2nd) 385, 393.

XXXVII.

APPENDIX D.

FINDINGS OF FACT QUOTED FROM OPINION OF SEVENTH CIRCUIT COURT OF APPEALS.

Upflow Softeners of Greater Utility Than Downflow Softeners:

"In the instant suit the advantages or disadvantages of an apparatus calling for a down flow of water through the zeolites were sharply contested. The District Judge found, contrary to the observations of the Court in the last-cited case, 'the evidence in the instant case is conclusive to the effect that upward flow softeners are in fact of greater utility and efficiency than down flow softeners.'

An examination of the evidence not only sustains the finding of the District Court but persuasively support it." (Trans., 684.) 43 Fed. (2nd) 898, 900.

No Basis in Specification or Claims for "Free and Unconfined Bed":

"* * * For the purpose of the argument only it may be conceded that an unconfined zeolite bed had merit as well as novelty. But of what signifi-

cance in this fact to the patentee who did not include in his specifications or in his claims a zeolite bed so limited?

We have looked in vain, in the claims and in the specifications of the Gans patent, for any language which mentions a zeolite bed which is free and unconfined. If the novelty of this invention, as it is now asserted, resides in the free and unconfined bed of zeolites, it is more than passing strange that the inventor should make no reference, either in specifications or in claims, to that which marked his advance over the prior art. Courts are not permitted to read into a claim a limitation of one of the elements which the patentee has not seen fit to impose. For what is not claimed by the patentee belongs to the public." (Trans., 684.)

"If there was a suggestion in either specifications or claims that permitted of an inference that a limitation of this element was intended, we might find some basis for supporting the construction for which appellant contends. But there seems to have been a studious avoidance of words of limitation,—a designed effort to make the elements as broad as possible which is entirely inconsistent with the now asserted limitations to this element without which validity cannot be recognized." (Trans., 685.) 43 Fed. (2nd) 898, 901.

Gans Article of April 15, 1909:

"Some dispute has arisen over the translation of a Gans article written in the German language. In a study of the various translations and in the differences that arise over them it is significant that Gans himself did not testify or explain or attempt to explain what appellee asserts was fatal to his right to a patent in the United States. He also failed to explain why he did not apply for a patent in Germany on the apparatus here under consideration. Gans was evidently an inventor who knew the value of patents and the record shows he secured several of them in the United States. His failure to secure one in Germany suggests, at least, that he was perhaps embarrassed by this prior art." (Trans., 685.) 43 Fed. (2nd) 898, 901.

"There are several reasons aside from the testimony of the qualified translator which support the District Court's finding respecting the correctness of the above translation. We need not elaborate them. The District Court discussed them and concluded that they were most persuasive, particularly in the absence of any explanation by Gans." (Trans., 687.) 43 Fed. (2nd.) 898, 902.

"There were other publications which evidenced rather clearly the state of the prior art. The German patent to Hans Leister No. 211,064, contained drawings wherein the bed of zeolites was unconfined." (Trans., 687.) 43 Fed. (2nd) 898, 902.

The Feldhoff Article of September 7, 1907:

"* * * * The Feldhoff article of September 7, 1907 dealt extensively with the use of the Gans artificial zeolites for softening water and also disclosed an apparatus for the use of such zeolites." (Trans., 687.) 43 Fed. (2nd) 898, 902.

"It was this article which caused appellant to file its disclaimer." (Trans., 687.) 43 Fed. (2nd) 898, 902.

Prior Art:

"The sum total of all this prior art citation leaves it tolerably clear (a) that it was old and well recognized to use zeolites for softening water, (b) to regenerate zeolites with salt, and (c) that the usual apparatus for accomplishing such purpose was in general similar to the Gans apparatus which in turn was like water filtering apparatuses widely used.

This apparatus consisted almost of necessity of a container, usually a steel casing, into which the water entered and out of which it passed. The location of the entry and the exit holes was optional with the mechanic and depended on whether he desired the water to flow downward or upward." (Trans., 688.) 43 Fed. (2nd) 898, 902.

"Into this case the filtering material was placed, usually resting on a bed of gravel. Over the filtering material another bed of gravel was sometimes though not always placed, to prevent the filtering

material from washing away. This upper bed of gravel either rested upon or was placed somewhat above the bed of filtering materials. Both ways are suggested and both ways were used.

In addition means had to be provided for permitting the regenerating material to pass in and out of the casing and through the filtering material. Inasmuch as there was no advantage in introducing the salt below or above the zeolites the mechanic or plumber naturally placed the exit hole at or near the bottom of the casing." (Trans., 689.) 43 Fed. (2nd) 898, 903.

Record in Seventh Circuit Different from Records in Second and Sixth Circuit Cases:

"* * * Moreover, we are satisfied, that the record in the instant case is somewhat different from the records presented on the other appeals." (Trans., 690.) 43 Fed. (2nd) 898, 903.

XXXVIII.

APPENDIX E.

CONCLUSIONS OF LAW STATED IN THE OPINION OF THE SEVENTH CIRCUIT COURT OF APPEALS.

Claims on Apparatus, Not Zeolites:

"It will be observed that the invention deals not with the use of zeolites as such nor with the regeneration of zeolites but rather with an apparatus which makes use of zeolites as a water softener, and which also permits of the injection and removal of salt into the casing to regenerate the zeolites which have lost their potency through use. The discovery of zeolites and their use as water softeners long antedate the application for the patent in suit." (Trans., 681.) 43 Fed. (2nd) 898, 899.

"Thus it will be seen that we are confronted by a combination product patent only. Utility of zeolites or the effect of salt on zeolites is not involved." (Trans., 682.) 43 Fed. (2nd) 898, 899.

No Invention in Downflow Over Upflow:

"* * * In view of the object to be accomplished, it would seem difficult, if not impossible, to say there was either merit or novelty in providing means which called for the down flow rather than the up flow of water through the bed of zeolites. The finding of the District Court, however, conclusively eliminates this asserted novelty (b) which resides in an apparatus which provides for the *down flow* of the water through the zeolites.

Confronted with a problem of providing means for the introduction of water into a casing at the bottom of which was a layer of gravel upon which rested a layer of zeolites, and through which the water was to pass, the mechanics had the choice of running the water upward or downward. As no new results attended the flowing of the water either way, it merely called for the exercise of discretion on the part of the mechanic to place the opening either at the top or at the bottom of the casing." (Trans., 684.) 43 Fed. (2nd) 898, 900.

Free and Unconfined Bed:

"* * * Courts are not permitted to read into a claim a limitation of one of the elements which the patentee has not seen fit to impose. For what is not claimed by the patentee belongs to the public." (Trans., 685.) 43 Fed. (2nd) 898, 901.

Free and Unconfined Bed—Claim 1 Invalid:

"But there seems to have been a studious avoidance of words of limitation,—a designed effort to make the elements as broad as possible which is entirely inconsistent with the now asserted limitations to this element without which validity cannot be recognized.

Moreover, there is another reason why this claim 1 is invalid.

If we read into this claim this limitation, and assume that the Gans patent called for an *unconfined* bed of zeolites, a study of the prior art leads us to the same conclusion. In short, there was no novelty

in the unconfinable character of the bed of zeolites." (Trans., 685.) 43 Fed. (2nd) 898, 901.

Bommarius Patents Nos. 519,565 *and* 632,091:

"* * * Other prior art citations were the Bommarius patents Nos. 519,565 and 632,091, each covering a 'filter' and each describing an apparatus for filtering water for drinking and other purposes. While neither contemplated the use of zeolites both covered apparatuses for use where water passed through a filtering bed, obviously a kindred art." (Trans., 688.) 43 Fed. (2nd) 898, 902.

Gebrauchsmuster:

"We were likewise not satisfied that they came within the provisions of Section 31, Title 35, U. S. C. A." (Trans., 688.) 43 Fed. (2nd) 898, 902.

"The weight of authority seems to exclude the use of the entire Gebrauchsmuster as anticipation. But the courts are divided in the question." (Trans., 688.) 43 Fed. (2nd) 898, 902.

Claim 5 *Invalid:*

"CLAIM 5. The validity of Claim 5 can only be sustained (in view of our holding Claim 1 invalid) on the theory that the last-named element 'means connected to the lowest point of the casing for removing the salt solution' introduced a novel element which evidenced something more than the skill of a mechanic. If there be novelty in this element it is traceable solely to the location of the means at the lowest point of the casing. To provide the means for an outlet at the bottom of the casing, (to secure a perfect drain), can, we think, by no stretch of the imagination, be described as invention. It is hardly conceivable that one (a mechanic or an unskilled artisan) constructing an apparatus of the kind here under consideration would locate the opening to drain off the substance (liquid or solid), temporarily inserted, at any place other than at the bottom." (Trans., 689.) 43 Fed. (2nd) 898, 903.

Claim 1, Invalid in View of Technische Rundschau:

"Moreover, the prior art here, too, stands between Gans and a valid patent. The Technische Rundschau contains a drawing of an apparatus for water softening through the use of zeolites and for regenerating the zeolites, which drawing located the means for removing the solution at the lowest point of the casing. One of the Bommarius filters had its outlet at the extreme bottom." (Trans., 689.) 43 Fed. (2nd) 898, 903.

Claim 5 Not Infringed:

"Finally it might be added that appellee's structures have their openings near the bottom but not at the lowest point of the casing and therefore do not infringe Claim 5. This is not so as to certain discarded structures, but as to its presently used structures, infringement of Claim 5 is not shown." (Trans., 689.) 43 Fed. (2nd) 898, 903.

Extensive Commercial Use Not Ascribed to Apparatus:

"* * * But we cannot ascribe this extensive use to both the commodity and to the apparatus for its use, when convinced that its actuating cause is to be found in the article only." (Trans., 690.) 43 Fed. (2nd) 898, 903.

XXXVIII.

APPENDIX F.

INCORRECT STATEMENTS MADE IN PETITIONER'S BRIEF.

1. On page 4 of petitioner's brief, there appears this statement:

"The conflict of decisions does not arise out of any difference in the records for there is only one item of art brought forward in the present case which was not before the Courts of the other Circuits."

An analysis will show that there is no conflict on the same matter between the decisions of the Courts of Appeals for the Second and Sixth Circuits on the one part and the Court of Appeals for the Seventh Circuit on the other part. The records are different.

Judge Lindley, the trial judge in the instant case, stated in his opinion (Rec., 566):

> "To me it seems manifest that had this situation been as fully presented to the various courts before whom there has heretofore been litigation as here, there could have been but one conclusion."

In this same connection, Judge Evans, speaking for the Seventh Circuit Court of Appeals, stated (Rec., 690):

> "Moreover, we are satisfied, that the record in the instant case is somewhat different from the records presented on the other appeals."

2. On page 7 of petitioner's brief, the following is stated:

> "Distillation of water is very expensive and impractical on a commercial scale (Rec., 282) but it was the only known way of securing a completely soft water, or one of 'zero' hardness as it is known in this art."

This is not the fact. The Gans Article of April 15, 1909, as translated by plaintiff's own translator, Mr. Haas, (Rec., 450) states:

> "The softening is complete even in the case of cold water."

And again at Rec., 451:

> "Within the first four or five days the filter supplies water of 0° hardness, after which the hardness gradually rises until the seventh day reaching 4.5° to 5° of hardness."

Again, see the Technische Rundschau Article of January 27, 1909 (Rec., 466):

> "The treated water may be reduced to 0° hardness or can be made to retain several degrees of hardness by regulating the flow through the filter."

These two publications, the Gans Article of April 15, 1909, and the Technische Rundschau Article of January 27, 1909, both mention practical commercial installations of zeolite water softeners which soften water to 0° hardness, notwithstanding plaintiff's statement to the contrary on page 7 of its brief.

3. On page 8 of plaintiff's brief, the following statement is made:

> "Prior to the patent, the chemical attributes of zeolites and their effect upon hard water had been long known, and many efforts to create an efficient mechanism had been tried, but none was commercially successful."

The last clause, that none of the zeolite water softeners was commercially successful before the patent, is not the fact in accordance with the record. See, for example, plaintiff's translation of the Gans Article of April 15, 1909, (Rec., 450):

> "* * * Various filters of this kind are already in use, partly for the production of soft water for boiler supply purposes, partly for laundries.
>
> The filter plants are notable for the simplicity of their arrangement. The softening is complete even in the case of cold water."

See also the Technische Rundschau Article of January 27, 1909, describing a zeolite water softener and its operation (Rec., 466):

> "In a Berlin factory there is such a plant for softening daily (10) hours 35 to 40 cubic meters of boiler feed water of 10° hardness (German). * * * During the first four or five days the filter gives a water of zero degrees hardness, * * * A boiler fed with permutite water for three months showed no trace of boiler scale according to a report of the operator and was considered perfect in every respect."

And yet counsel for plaintiff states in its brief that prior to the patent there was no commercially successful zeolite water softener.

4. Plaintiff in its brief on page 11, in speaking of sand filters, states:

> "• • • Even the Court below simply mentions, without applying, them (Rec., 687, bottom)."

The Court of Appeals for the Seventh Circuit did more than just mention sand filters. It stated (Rec., 687):

> "Other prior art citations were the Bommarius patents Nos. 519,565 and 632,091, each covering a 'filter' and each describing an apparatus for filtering water for drinking and other purposes. While neither contemplated the use of zeolites both covered apparatuses for use where water passed through a filtering bed, obviously a kindred art."

Judge Lindley, on this same point, stated (Rec., 569):

> "I am of the opinion further that the patent office was right in its conclusion that in substance the claims are merely reproductions of structures found in the prior art; that in such filters as those in Jewel No. 478,261, July 5th, 1892, Bachman No. 678,532, July 16, 1901, and Driesbach No. 630,870, we find apparently a free and unconfined bed, the elements injected into these claims by the Court of Appeals for the Sixth and Second Circuits in order to validate the same. Remembering the comments of the patent office upon the Bommarius patents, observing that the defendant at the present time manufactures sand filters of the same structure as zeolite softeners, it seems claim that there was no invention in either claim because of the substitution of zeolites. Duggen, technical manager of the plaintiff, in March 1920 wrote a letter, in which he said: 'The process is a very simple one as you will notice by the literature which we enclose. It is nothing more or less than a filter, but the bed, instead of being sand or some other material, is a zeolite which is manufactured in our factory in Brooklyn.'
>
> True it is that the process of softening involves a chemical change as the water passes through the zeolites, where as the purification of water through sand involves only the removal of physical impurities, yet the mere substitution of the zeolites for sand is not invention, in view of the fact that zeolites themselves were previously patented by Gans. (No. 943,535, reissues thereof No. 13,688 and No.

960,887). He undoubtedly accomplished invention in these patents, but when he merely adapted the sand filter construction to the use of zeolites by substituting the latter for sand he did not accomplish invention. The art of filtering and that of softening, if not identical, are surely analogous. (*Jay* v. *Weinberg, et al.*, 262 Fed. 973,—C. C. A. 7)."

Therefore, plaintiff's statement on page 11 of its brief not only is incorrect but is misleading.

5. Plaintiff at page 17 of its brief states:

"In the early suits on the Gans patent there are many references to a free bed and a 'locked bed.' From the decisions in these cases it is clear that the matters of defense, regarding the prior structures, were presented in much the same way as they are presented in the present case."

Such is not so. In the case at bar, plaintiff's patent expert, Mr. Waterman, has given for the first time his definition of a locked bed. He states (Rec., 83) that if the intervening space between the top of the zeolite bed and the plate thereabove amounts to more than 10 per cent by volume of the volume of the zeolite bed, then the zeolite bed is not locked, and if it is 10 per cent or less, the zeolite bed is locked.

"The Court: You have your opinion at this time that less than ten per cent would not be effective in the washing process, and that might therefore be termed locked bed?

The Witness: Yes." (Rec., 83.)

Therefore, the record in the present case with respect to the question of "locked bed" is entirely different from the defense point of view, notwithstanding the statement to the contrary on page 17 of plaintiff's brief.

6. On page 18 of plaintiff's brief, the following statement is made:

"In the present case we have a device constructed in alleged accordance with the disclosure of the Rundschau article (Rec., 465); this Rundschau ar-

ticle had been before the Courts of Appeals for the Second and Sixth Circuits and was recognized to show the inoperative locked bed."

On the contrary, the Sixth Circuit Court of Appeals, so far as the defendant can see, does not mention in any place the Rundschau Article. Undoubtedly the reason why the Sixth Circuit Court of Appeals did not mention the Rundschau Article is because that court was led to believe that an upflow water softener would not operate, and accordingly any reference disclosing an upflow water softener had no anticipatory value.

Judge Denison, in speaking for the Sixth Circuit Court of Appeals in *Permutit* v. *Wadham, et al.*, 13 Fed. (2d) 454, at 457 stated:

"Nor does it follow that in this particular environment there is any particular distinction between the downflow and the upflow. The former works satisfactory and it seems probable, if not certain, that the latter would not."

In this connection, it will be apparent that Judge Denison was talking about the Feldhoff Article for in his opinion, at the top of page 457, he speaks about Gans disclaiming upflow softeners. It will be recalled that it was because of the Feldhoff Article that disclaimer was filed with respect to upflow softeners. Here again, therefore, plaintiff's brief does not correctly state the fact.

7. Plaintiff makes another incorrect statement on page 18 of its brief. The following is quoted therefrom:

"* * * The fact is that any bed which permits grain rearrangement, is a free bed; * * *"

Plaintiff's patent expert, Mr. Waterman, states to the contrary, as hereinabove quoted on the question of locked beds.

8. On page 19 of its brief, plaintiff states:

"* * * Respondent's proofs, however, did not show a single instance of a commercial softener with

a locked bed—all commercial softeners have, and *must have,* a free space above the zeolite bed."

In accordance with the definition given by plaintiff's patent expert, Mr. Waterman, the water softener at the Maywood plant of the Sanitary District of Chicago, clearly has a locked bed. (Rec., 187 to 190 inclusive and 553.) The zeolite bed has a vertical dimension of 66 ins., and there is a space of ¾ in. above the top of the zeolite bed and the screen. Certainly ¾ in. is less than one-tenth of 66 ins., clearly showing that the commercially used zeolite water softener at the Maywood plant of the Sanitary District has a locked bed within the definition of Mr. Waterman, notwithstanding the statement to the contrary in plaintiff's brief.

9. Plaintiff in its brief on page 22 states:

"Rundschau, like other items of the prior art, had a locked bed—that prevents the successful operation of a zeolite water softener. The Graver engineers in making the Hawthorne device discarded the locked bed of Rundschau and adapted the free and unconfined zeolite bed of the Gans patent in suit * * *."

According to the definition of a locked bed given by Mr. Waterman, plaintiff's patent expert, the Rundschau device as built by defendant has a locked bed. As defined by plaintiff's patent expert, Mr. Hammer, it has a free and unconfined bed. Accordingly, the statement made in plaintiff's brief is incorrect.

10. Plaintiff on page 25 of its brief states:

"* * * The use of a high flow rate at Hawthorne *more than three times as great as that which is disclosed,* was used for the purpose of preventing 'channeling' * * *"

Such fact is not established by the record.

The other adverse assertions with respect to the Rundschau device made by plaintiff in its brief on pages 26 and 27, are not accurate and are unwarranted.

11. Page 38 of plaintiff's brief refers to the Gans Article of April 15, 1909, and in connection with the translation thereof refers to an article on the Gans device in the English journal, "The Practical Engineer" (Rec., 471), plaintiff indicating that "The Practical Engineer" article is the same as the Gans Article of April 15, 1909, whereas the fact is that "The Practical Engineer" article is one corresponding to the Technische Rundschau Article of January 27, 1909. Therefore, the inferences which plaintiff draws in its brief with respect to the interpretation of the Gans Article by "The Practical Engineer" article are incorrect and misleading.

12. On page 41 of plaintiff's brief, there is stated:

> "The respondent urges non-infringement of claim 5 by the Graver 1927 up-flow softener on three grounds: * * * and (3) that the up-flow Graver 1927 softener has no means for removing the spent salt solution (regenerating brine) from the bottom of the casing."

Defendant has made no such statement. Defendant has stated consistently throughout that defendant's 1927 upflow softener does not have "means connected to the lowest point of the casing for removing the salt solution so introduced," which means is an element in Claim 5 in issue. Not only did the trial court and the Seventh Circuit Court of Appeals hold that defendant's 1927 softener does not have "means connected to the lowest point of the casing," but plaintiff's witness, Mr. Tiger, admitted that defendant's 1927 upflow softener and its 1925 downflow softener did not have "means connected to the lowest point of the casing for removing the salt solution so introduced." (Rec., 30.)

All of the above incorrect statements in plaintiff's brief are misleading and are not based upon established facts.